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GROUND FORCE MOBILITY

Brigadier General Paul M. Robinett, *USA-Ret.*

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

IN A military sense, mobility implies more than just mobility in equipment and in organization. It is also a state of mind. If it does not exist in the minds of responsible high-level civilian and military leaders, mobility is impossible on the battlefield even though equipment and the organization of forces make it possible. The lack of mobility in mind will result in rigid, short-sighted plans and in sloth-like operations which will tend to degenerate into static situations.

On the other hand, mobile-minded leadership, lacking mobile weapons and organization and adequate logistical preparation for the execution of operations, can only develop unsound projects which will ultimately lead to disaster. So it is that static or defensive warfare is the refuge of mediocre civilians and military leaders and mobile warfare the pitfall of the incautious. These two possibilities are the scarlet threads that run through all of recorded military history.

Historical Background

The story of war is the record of an unending contest between the proponents of static and mobile concepts. Napoleon, for example, came upon the scene at a time when the armies of Europe had fallen into a fixed pattern and military operations were conducted in a sloth-like, geometric manner. It was the end of the period of mercenaries. He adopted a revolutionary organization. He developed military organization in these masses and made them capable of moving with great rapidity, of living off the country, and of striking with great violence at a decisive place and time. Napoleon was a genius of maneuver and, for a time, of logistics. In the end, however, he brought about his own ruin by pursuing the elusive Russian Army beyond the limits of his mobility and in disregard of logistical considerations.

Another great disciple of mobility was Hitler. Taking advantage of the industrial potential of his country, of the military decadence of his neighbors, and of the disarmed status of Germany, he developed military organization and equipment of great mobility and offensive striking power. Consequently, by 1939 all opposing ground forces were obsolete and ripe for destruction. But the *Führer* was an impatient man and launched a series of lightning wars before his machine was fully built. He won some of the greatest victories of all time, but to no avail. His obsession for mobility and his lack of comprehension of logistical considerations led him into the limitless depths of the Soviet Union without having taken the

Mobile-minded leadership lacking mobile weapons, organization, and the adequate logistical preparation for the execution of operations can only develop unsound projects which will ultimately lead to disaster

precaution of preparing for a winter campaign, beyond the capabilities of his mobile forces, and ultimately to his doom. Hitler entered upon this venture with less than 3,500 *Mark II, III,* and *IV* tanks while, Guderian estimates, the Soviets had 17,000 tanks in 1937 and had increased the number by the time the campaign opened on 22 June 1941. But the great surprise to the Germans was the appearance of the superior Soviet *T34* tank near the limit of their penetration.

Mobile Minds Without Means

Interesting examples of offensive mobile-minded high commands, lacking the means for mobile operations or the ability to concentrate those available, were those of France and of Germany at the beginning of World War I. The high commands of both nations had decided upon the offensive and each of them attempted to launch a great attack at the outbreak of hostilities. The French forces were quickly thrown back and were fighting for existence in a series of retrograde actions. On the other hand, the German High Command, although tactically successful, lacked energy and weakened the enveloping forces by detaching elements to the east and by failing to mass the cavalry on the exposed right flank. The Germans thus soon lost the ability to continue the offensive and were forced back upon the defensive. They had hoped that by repeated limited objective attacks they could hold the initiative and eventually wear down and destroy the allies in the West. But they failed completely when the weight of the United States Army tipped the scales against them. Genius was lacking on both sides during the prewar planning and organization of forces and in the actual employment of existing mobile forces in the conduct of operations.

Mobile Warfare in World War II

The possibilities of mobile warfare were not fully tested in World War II because of a lack of imagination in the preparation of plans and in the organization of forces. The chiefs of the various military establishments and their principal staff subordinates were of traditionally conservative mold—some more than others. In Great Britain, France, and the United States, the idea of mobile warfare was not welcome. There were some advances in mobility, but its advocates, particularly in Great Britain and France, had no official part in the preparation of either plans or forces. Many advocates of mobility, notably Fuller, Liddell Hart, and De Gaulle, were to have more influence in the enemy camp than in their own lands.

German Mechanization

In Germany, Guderian's ideas of mobility were no better received in the General Staff. On gaining control in 1933, Hitler quickly adopted the idea of mechanized warfare, but his administrative organization was inefficient. Finally, he was lured into precipitate action by the prospects of quick and sure tactical successes, but with the panzer command still in an incomplete state and its destructive operational possibilities imperfectly understood. Although improvements were made and panzer corps and armies were created, the German armored force was never as fully developed as mobile-minded commanders, such as Guderian, planned, but remained a make-shift substitute to the end. It was so because Hitler made 25 panzer divisions out of 10, without increasing his tank strength proportionately. Neither did German invention and production ever match Hitler's requirements—which were far greater than he envisaged. Thus, he won only tactical successes and eventually suffered an annihilating defeat. The mobile-minded *Führer* came to his tragic end still commanding imaginary mobile forces, which in reality existed only on paper.

American Mobility

In the United States, mobile-minded men were carefully denied responsible posts in the War Department. They had no part whatsoever in planning the World War II Army or in formulating strategic plans for the employment of the Army. German blitz successes in Poland were rather lightly regarded, but the fall of France, under the crushing blows of Von Kleist's and Guderian's panzer corps, made a profound impression. However, the basic reasons for the German victory in the West were not well understood. It resulted from a strategic surprise, from the speed and violence of the attack by massed and co-ordinated *Luftwaffe* and panzer forces on a narrow front at the point of main effort, from the speedy exploitation of the break-through, and from the relentless pursuit of the broken Anglo-French armies.

American Equipment

Following the German successes in Western Europe, the War Department created the Armored Force, with almost autonomous authority, under General Chaffee, a long-time advocate of mobile warfare. He had the vision so lacking in the War Department, but death intervened and his grand idea was soon blighted by less imaginative minds. World crisis passed and the traditionalists in the War Department reverted to form. Effort and means that should have gone into the creation of an offensive mobile force of armored corps and armies were squandered in developing inefficient antitank organizations and equipment. Some of the latter, as for example a 37-mm gun mounted in the tail end of a light truck and a 75-mm gun mounted in the front end of a halftrack, although probably adopted only as stop-gap equipment, were retained too long and proved useless and sometimes even tragic to the little band which fought the meeting engagement with German troops in Africa. Yet it cost many millions of dollars and, most unfortunately, represented the squandering of military personnel, of strategic materials, and of labor on defensive organizations. This violation of the principle of economy of force and of means, together with others, could have been responsible for our defeat had the balance been more closely drawn than it was.

Finally, when Germany culminated a blitz through the Balkans by seizing Crete with airborne troops, the War Department, not knowing the exorbitant cost of the apparent victory in blood and matériel, created an excessively large airborne force—the most costly and the least mobile form of ground troops. But worse still, these units were allowed to recruit the adventurous, dynamic, mobile-minded personnel from the Army. This tended to reduce still further the quality of the infantry, armor, and artillery personnel because the Army Air Forces got first choice.

American Armor in Europe

In the European theater, the lack of mobile-mindedness in the War Department was equally apparent in Allied Force headquarters and in 12th Army Group headquarters. All of the principal commanders and staff officers assigned to these two important headquarters were soundly based in traditional broad front operations by infantry. The concepts of battle and of logistical support originating in these headquarters displayed a uniform lack of imagination in concepts of mobility. A mobile-minded subordinate, General Patton, frequently achieved limited successes by circumventing his superiors, but he was not able to destroy the German Fifteenth Army which extricated itself from France, established a defensive position, and inflicted very heavy casualties before being driven out.

General Chaffee had envisaged a mobile force including armored corps and armored armies. But before the battle was

joined the armored corps was abandoned and all ideas of armored armies discarded in favor of a more even distribution of mobile troops throughout the field forces. For example, during operations in Europe a typical American corps included two infantry divisions and one armored division and, in time, each infantry division included one or more separate tank battalions. As Lieutenant General Edward H. Brooks has aptly said "the frequent improper use of armor by American corps—two infantry divisions and one armored division abreast—was like hooking a race horse to a yoke of oxen." Such an allotment of armored elements did not materially increase the mobility of the infantry divisions or corps. But, on the contrary, it precluded the creation of efficient armored corps and armies capable of cross-country mobility in all their parts. This inevitably led to operations on a broad front with lack of armor concentration at points of main effort. Consequently, the Anglo-American campaign in the West was a conventional operation in which superior numbers of men and equipment overcame a failing enemy, hopelessly thrown back everywhere upon the defensive. The possibility existed for a classical and speedy victory of enormous proportions, but this would have required the concentration of a highly mobile armored army on the right flank, backed with adequate logistical support both on the ground and from the air.

What Might Have Been

The actual performance of General Patton's Third Army on the right flank during the Lorraine campaign furnished only a hint of what might have been accomplished by an adequately supported armored army on that flank. General Patton was mobile-minded but his army was only a typical American army, not an armored army, and lacked the necessary logistical support from the air and on the ground. This support could have been furnished had higher staffs been mobile-minded in sufficient time to prepare the means. Little could be done by improvisation.

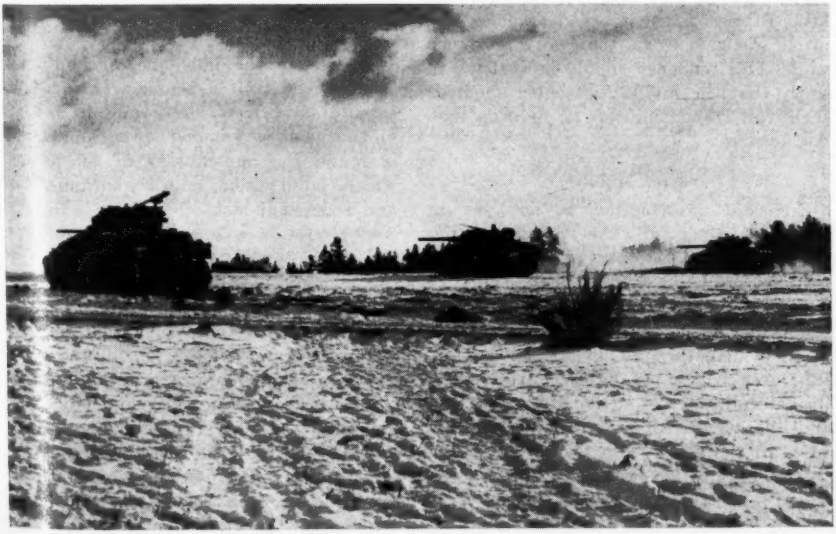
Mobile-Mindedness Lacking

A contributing factor to the mediocrity of the Anglo-American victory in Western Europe during World War II, one which clearly indicated the lack of mobile-mindedness, was the multiplicity of overstaffed headquarters in the chain of command and the excessive control exercised by these headquarters. From the divisions and corps, the chain extended back through army, army group, and Allied Force headquarters to the Combined Chiefs of Staff and the Chiefs of State—Churchill and Roosevelt. This, however, does not reveal the real situation: because various headquarters had deputy commanders, the practical effect was to lengthen still further the chain of command. Overstuffed staffs tended to slow down decisions, to retard the flow of information, and to delay the transmission of orders. Illustrative of overstaffing was General Eisenhower's headquarters which included more than 16,000 officers and enlisted men during operations and more than 30,000 by the time the occupation of Germany was underway. The troops serving under such command arrangements were not even capable of the mobility inherent in their equipment and organization. Sloth-like operations and a tendency to fall back upon the defensive inevitably resulted and were generally overcome by the initiative and resolution of troop leaders near the front.

The Staff Problem

American planners would do well to turn to history for a few basic principles concerning staffs rather than blindly accept the World War II pattern. Von Steuben was a capable general staff officer. He sums up his experience as follows: "My observation is where one person is found adequate to the discharge of a duty by

The War Department created an airborne force, the least mobile form of ground troops, and filled it with mobile-minded soldiers. This reduced the quality of available armor, infantry, and artillery personnel. Above, American paratroopers landing in Korea. Below, American tanks advancing during action in Belgium.—Department of Defense photos.



close application, it is worse executed by two and scarcely done at all by three." Still later, General William T. Sherman, the outstanding army commander of the Civil War, severely criticized large staffs in these words: "A bulky staff implies a division of responsibility, slowness of action, and indecision, whereas a small staff implies activity and concentration of purpose."

The severest criticism of an overlengthened chain of command has been made by the profound student of war, Clausewitz, who has said: ". . . An order loses in rapidity, force, and exactness if the graduation ladder down which it has to descend is long. . . ." Even if allowance were made for the simplicity of warfare during the days of Von Steuben and Sherman, little justification can be found for the excessively large staffs during World War II. Their conclusions still apply. Something must be done to prevent the staffs from degenerating into intellectual boondoggling. There are degrees of refinement in staff work which go far beyond the practical requirements of the armed forces and a marked tendency for intellectuals to worm their way into such work. This tendency should be resisted in order that the intellectuals may shoulder their full responsibilities as fighting men and leaders.

Soviet Mobility

Sufficient information is not yet at hand to analyze fully the Soviet performance in Eastern Europe, but enough information is available to indicate that the Communists' performance on that front was rather mediocre considering the means at their disposal, the nature of the terrain over which the fighting took place, the determination of Hitler to hold ground, and the weight of the ground and air effort of the allies from the West.

With only a few exceptions, notably the Soviet break-through and advance to Warsaw in the summer of 1944, the Soviet effort was little more than a methodical advance on a broad front during which German resistance was simply ground under foot.

Post World War II

The American situation following World War II was that of a victor with all the advantages and disadvantages that usually accrue to a nation under such circumstances. Having destroyed the menace posed by the German and Japanese war machines, with the help of allies, the United States found itself one of the two remaining great powers. Unlike the other, however, the United States, while retaining the atom bomb, abandoned its armed forces and lost, through improper storage, or scrapped its military equipment.

The Soviet Union, on the other hand, retained its armed forces and equipment and adopted a line of action diametrically opposed to that of its former associate.

As a result of these opposite decisions, preponderance of force almost immediately passed to the Soviet Union and led it to become increasingly belligerent in all its actions.

To rectify the imbalance it had itself created, the United States was forced to expand its armed forces and to initiate an enormous rearmament program. Herein is found the opportunity of all nations which build their military organization and armament last.

Post World War I

Following World War I, Germany was stripped of armament and denied the right to build certain types such as tanks and airplanes. On the other hand, the allied nations retained old armament and expended little upon new development. When Germany rearmed, it took advantage of considerable research into the weapons of other armies but neither copied the old ones it had been compelled to abandon nor the new ones of other nations. It de-

veloped weapons and organization with which to destroy the armed forces of its prospective enemies. Following World War II, the United States demobilized its armed forces and scrapped about 80 percent of its equipment while the Soviet Union retained the mass of its equipment. Consequently, it created for the United States the same advantage that Germany had following World War I. Taking a lesson from German experience, military forces and equipment retained by the Soviet Union could have been rendered utterly obsolete by developing a more flexible and mobile organization with superior weapons. When caught in a predicament such as that of the United States, however, the natural tendency is to develop quickly the military organization and equipment necessary to counter the enemy rather than those intended to defeat and destroy him. This natural tendency is, therefore, defensive and static and not offensive and mobile and should be avoided.

Our Present Concept

There is already certain evidence to show that American political and military leadership has followed the natural tendency and has lost faith in the most mobile ground weapon—the tank. In this connection we need only recall the statement of Secretary of the Army Pace to the West Point cadets on 6 June 1950:

> The principles of the recoilless weapon, the bazooka, and the shape charge are being developed to a point where the mechanized panzer *blitzkrieg* will play a much less decisive role than it did in the last war.
>
> Adding to those the more recent developments with regard to guided missiles and rockets, target-seeking equipment, and the possibilities of tactical use of atomic weapons, *it may well be that tank warfare as we have known it will soon be obsolete.*

In addition to official pronouncements indicating a loss of faith in mobility and the mobile arm, the postwar field exercises have written out this lack of faith on the ground. There is, however, evidence to show that our leaders have put their faith in airborne troops which some of them consider to have the highest order of mobility. General Bolte has said that our objective is airborne armies. But an analysis of the facts will show conclusively that airborne troops are the least mobile of all ground fighters, although primarily for offensive warfare and tied to other ground elements. For example, on several occasions in World War II, it was planned to use airborne troops, but ground elements had already seized the objective before they could be launched. Unless carefully co-ordinated with armored elements, airborne troops are inevitably drawn into piecemeal action at a time when they are bruised, battered, and confused by the landing. At the very best they are but light troops incapable of sustained action or of standing against heavily equipped, mobile ground troops. There is a role for airborne troops, but it is not to win wars by themselves. Such troops are of highest importance to armored corps and armies in seizing defiles and airfields essential for rapid sustained operations and in partisan activities behind the enemy's front. Airborne and armored elements and air forces must be trained together continuously if they are to function efficiently as a team.

Defensive-Mindedness

The defensive-mindedness of our current leadership has led to the parceling out of mobile armored troops and of permanently tying them to the capabilities of foot soldiers having only a nylon suit and a steel helmet to protect them from enemy fire. This dispersal of the mobile elements of the Army will lead to static actions on a broad front and, even if successful, will result in position warfare based upon mobile equipment, fire power, and manpower. This is just as fallacious as the passive defense based on field fortifications, obstacles, mines, and fire power

such as the Maginot Line. Decisive results can never be achieved by such immobile measures.

Mobility and Manpower

If the United States abandons the dominant principle of mobility in favor of the static concept, it will forfeit its best chance of winning the next great war. It lacks the necessary manpower for such a concept. Besides, such a concept would be faulty even if the manpower were available. If the genius of the American people is fully employed in developing the forces required to win the next war, advantage must be taken of their mechanical ability and productive capacity. This would lead to the organization of armored, full-track corps and perhaps armies capable of being operationally and logistically supported from the air and of operating in the great plains areas of the world toward decisive geographical, political, and production centers without regard to frontiers or linear defenses established by the enemy. This would lead also to the organization of light troops capable of affecting the final subjugation, occupation, and administration of territories overrun by the mobile army. Every vehicle in the full-track corps or army would be of cross-country type, armored at least against small-arms fire and shell fragments, and capable of delivering machine-gun fire against air and ground targets. The modern mobile army should be capable of operating logistically from landing areas in much the same way that fleets operate from naval bases. Advance into hostile territory should be from landing areas to landing areas and operations should be extended from such areas as bases. Such an organization, co-ordinated with a dominant and properly constituted air force capable of all support missions including the delivery of essential airborne troops and the atom bomb, could overwhelm any armed force that exists in the world today. With it the true genius of our native military leadership would rise again to the level set by General Grant and his mighty team of Meade and Sheridan in the east and Sherman in the west and south. In co-operation with the blockading fleets at sea, this combination brought the Civil War to an end. A proper mobile force, with up-to-date support in the air and on the sea, and with the guidance of gifted leaders, might again take the risk, incident to a deep penetration into the enemy's heartland, that Sherman took and would reap an even greater harvest. The logistical plan for Sherman's operation contemplated living off the country, but his wagon train carried the minimum requirements necessary to reach a base at Savannah, Georgia. That was the reserve that reduced considerably the risk he took. It is the historical example that needs careful study by those who would fully exploit the possibilities of mobile warfare in this era of cross-country, track vehicles, airplanes, guided missiles, and atom bombs.

Air and Armor

Air power has made it possible for an armored force, completely mounted in cross-country, fighting vehicles, to operate on land in much the same fashion as an air-supported fleet operates on sea. This modifies the orthodox concepts of linear or broad front tactics and of secure lines of ground communications in war.

The problem of combining air power and mobile ground forces into an offensive team is the challenge that confronts American military leadership in the dangerous days that lie ahead. This is the combination that can relieve the infantry of the bloody battles of broad front operations.

KNOW YOUR ALLIES

Lieutenant Colonel Carl N. DeVaney, *Armor*
Instructor, Command and General Staff College

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

COMBINED operations, as defined by the United States Army, are those military operations conducted by forces of two or more allied nations acting together for the accomplishment of a single mission. The factors affecting the military co-operation and co-ordination among allied nations present a challange to the commanders and staffs at all echelons. Differences in language complicate many tasks. National policies and customs of the allied nations may vary widely. In the successful execution of combined operations the problems have been satisfactorily resolved in the past, and are being resolved today. With a greater amount of emphasis being given to such problems today, the future co-operation and co-ordination among allied nations should approach the ultimate in understanding among the *allied nations acting together for the accomplishment of a single mission.*

Students of military history can cite many examples of outstanding successful combined operations. Probably the most notable example was the successful prosecution of World War II in all theaters of operations. The extent of participation of combined forces in the different theaters varied to a great extent, dependent, among other factors, upon the theater emphasis and the allied nations' forces most readily available for the tasks to be accomplished. However, much that has been written and studied on combined operations in World War II has been concerned with theater, army group, army, and, to a lesser extent, corps level operations.

The Korean Conflict

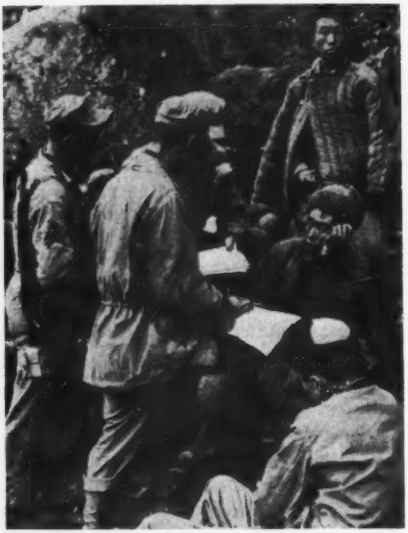
Current interest may be directed to the Korean conflict. In a sense, that operation may be classified as the greatest combined operation in the history of mankind, for as many as 20 allied nations have been fighting together to accomplish a single mission. As compared with World War II, the area of operations and the size of the total forces involved are relatively small. It is within the realm of possibility that similar combined operations may be conducted in the future in other areas, by combined forces including as many or more allied nations.

Small National Units

To a limited extent during World War II, and to a greater extent in the Korean conflict, units below the division level from one allied nation have been attached to a larger size unit of another nation. In the future, we may logically expect

Language, national policies, and customs are problems affecting co-ordination and co-operation among allied nations. Our future success depends on our ability to solve these problems promptly and satisfactorily

to find more units of allied nations operating together at the lower troop levels than in the past. Problems are resolved at this level as they are at the higher command levels, however, the many and intricate co-operation and co-ordination details accomplished at the lower levels are less frequently brought to our attention. In these combined operations, the battalion commander, the company commander, and the platoon leader are the key personnel.



American and South Korean interrogators questioning a Communist prisoner of war.

Standardization

Some progress has been made toward standardization of certain military matters among some allied nations. The United States-United Kingdom-Canadian Armies Non-Matériel Standardization Program (short title: SOLOG) is accomplishing the standardization of certain aspects of military functions within these armies. One example is the standardization of map sheet sizes for various scales as announced in SOLOG Agreement 12, which provides, in part:

1. *Objective.*—To insure that maps produced by the army of any one country can be readily reproduced by armies of the other two.

2. *Scope.*—The sheet sizes and paper and equipment sizes currently employed by each army have been investigated. Consideration has been given to scales of maps to be printed in the following classes of map reproducing plants: static, semi-mobile, and mobile.

3. *Existing differences.*—Sizes of equipment and map sheets vary greatly.

4. *Degree of standardization.*—Complete for maps of standard series. This is to be achieved as suitable equipment becomes available and as it becomes feasible to redesign existing map series.

5. *Action.*—*a.* Military map production agencies of the three countries will limit the printing size of all military maps to 33 inches by 44 inches and, in the case of 1:250,000 and larger scales, the printing size must not exceed 21 5/8 inches by 28 inches; with a standard paper size of 22½ inches by 29 inches.

b. Civil map production agencies of the three countries should be informed of these standard sizes and should be encouraged to conform.

However, it is by personal contact, liaison, and an understanding of other allied nations' methods, procedures, and techniques that success is assured in combined operations at the lower troop levels. Here, we do not find the personnel of the many allied nations welded together in an integrated staff with personnel with linguistic abilities, or personnel with long years of study and experience in working with other allied nations. Here, we find that sign language and follow me techniques may be used to a great extent. This is particularly true when small units of different allied nations are brought together for battle with little or no previous orientation.

Language

Considerable emphasis is being placed on the language problem by many allied nations. Language courses are offered in the service schools system, and the exchange of key personnel between allied nations for duty tours is common.

The Korean conflict may be called the greatest combined operation in the history of mankind. Above, a Thailand regiment being inspected by an American officer and a Thailand officer. Below left, UN troops enjoying a Special Services show. Below right, ROK troops marching under the colors of the United States.—Department of Defense photos.

COMPARISON OF UNITED STATES ESTIMATE OF SITUATION AND BRITISH APPRECIATION OF THE SITUATION.

ESTIMATE OF THE SITUATION (UNITED STATES ARMY)

1. MISSION.—To secure . . . . .

2. THE SITUATION AND COURSES OF ACTION.—

a. Considerations affecting the possible courses of action.
(1) Characteristics of the area of operations.
(a) Weather.—. . . . .
(b) Terrain.—. . . . .
(c) . . . . . .
(2) Relative combat power.
(a) Enemy situation.—. . . . .
(b) Own situation.—. . . . .

b. Enemy capabilities.
(1) The enemy can defend in present position . . . . .
(2) The enemy can delay on successive positions . . . . .
(3) . . . . . .

c. Own courses of action.
(1) Attack early 10 April in direction . . . . .
(2) Attack early 11 April in direction . . . . .
(3) . . . . . .

3. ANALYSIS OF OPPOSING COURSES OF ACTION.—

a. Enemy capabilities which influence own courses are ....

b. If we attack early 10 April in direction . . . . .
(1) And enemy defends . . . . . (probable outcome of operation)
(2) And enemy delays . . . . . (probable outcome of operation)
(3) . . . . . .
(Note.—Enemy capabilities having little or no effect on own courses of action are eliminated from further consideration.)

c. If we attack early 11 April in direction . . . .
(1) And enemy defends . . . . . (probable outcome of operation)
(2) And enemy delays . . . . . (probable outcome of operation)
(3) . . . . . .

d. . . . . .
(1) . . . . . .
(2) . . . . . .
(3) . . . . . .

4. COMPARISON OF OWN COURSES OF ACTION.—

a. Significant factors are (1) terrain, (2) relative strength, (3) enemy dispositions, (4) . . . . .

b. Terrain
. . . . . .
Conclusion . . . terrain favors an attack early . . . . .

c. Relative strength
. . . . . .
. . . . . .
(Note.—Significant factors determined as result of tactical reasoning in Para 2 and 3. The effect of each factor on each own course of action is considered.)

d. Enemy dispositions.
. . . . . .
. . . . . .
Conclusion . . . . .

e. . . . . .

f. . . . . .

5. DECISION.—29th Infantry Division attacks . . . . .
(WHO, WHAT, WHEN, WHERE, HOW, and WHY)

APPRECIATION OF THE SITUATION (BRITISH ARMY)

(INTRODUCTION) *

AIM

1. To capture . . . . .

(BODY OF THE ARGUMENT) *

FACTORS

2. Relative strength
. . . . . .
Conclusion . . . . .
(Note.—Factors are put in order of importance. These are only sample factors. They will vary on each occasion.)

3. Ground
. . . . . .
Conclusion . . . . .
(Note.—A conclusion under "ground,"—Movement is not restricted to roads, advance can be made on a broad front.)

4. Time and space
. . . . . .
Conclusion . . . . .

5. Weather
. . . . . .
Conclusion . . . . .

6. Air
. . . . . .
Conclusion . . . . .

7. . . . . .

8. . . . . .

9. . . . . .

COURSES OPEN TO BOTH SIDES

10. To me.—

a. I can attack early 10 April in direction . . . . .
Advantages
. . . . . .
Disadvantages
. . . . . .
(Note.—Consider first the courses open to the side with the initiative.)

b. I can attack early 11 April in direction . . . . .
Advantages
. . . . . .
Disadvantages
. . . . . .

c. . . . . .

11. To the enemy.—

a. The enemy can hold present position . . . . .
Advantages
. . . . . .
Disadvantages
. . . . . .

b. The enemy can delay on successive positions . . . . .
Advantages
. . . . . .
Disadvantages
. . . . . .

c. . . . . .

12. The enemy is more likely to adopt course 11 b.

13. I propose to adopt course 10 a.

(CONCLUSION) *

PLAN

14. I will attack with . . . . . (Note.—Includes tasks, grouping
15. . . . . of troops by types, and main timings.)

* A written appreciation follows normal sequence of any military paper as indicated by titles. These headings would not normally appear in the Appreciation.

FIGURE 1.

Disregarding the language difference as one major difficulty in combined operations, one will observe different terminology and techniques in routine command and staff functions between allies that use a common language. These differences are found in the procedures of the British and United States Armies. In an article appearing in the April 1952 MILITARY REVIEW ("The British Army Staff"), the details of the British staff organization, as compared with the United States staff organization, were outlined. The statement was made that "since the members of both armies do the same things such as eat, shoot, ride, get sick, and are 'informed,' the functions charged to the United States and British staffs are almost identical. However, the organization of the staffs, the titles of the responsible officers, the staff techniques that are used, and even the military terminology used show marked differences."

A comparison of staff techniques and manner of defining certain military expressions between the United States and British Armies will indicate the care and study required in planning and executing small unit combined operations to eliminate some of the many misunderstandings which would be detrimental to the success of the combined forces operation.

A British "Tommy" and an American soldier playing monopoly aboard a Danish hospital ship while another patient and a Danish doctor watch.—Department of Defense photo.

For the purpose of illustration, let us consider two of the formal documents constantly used by United States and British commanders and staffs in the everyday conduct of the military profession.

Estimate of the Situation

In determining the best solution to a problem, every individual, group, organization, or military formation employs a kind of reasoning process to arrive at the best solution to a problem. It is to be noted that the United States Army prescribes a definite form, composed of five major paragraphs, to be followed by a commander in order to guide his reason-

SAMPLE UNITED STATES ARMY AND BRITISH ARMY OPERATION ORDERS.

OPERATION ORDER* (UNITED STATES ARMY)

1. GENERAL SITUATION

a. Enemy Forces
(1) Periodic Intelligence Report No. 63.
(2) 63d Mechanized Div has been identified on the Div front.
(3) Unidentified NiNo Div located at AURORA (6325).

b. Friendly Forces
(1) I Corps occupies and defends line AURORA—BLATZ—CHRISMAN.
(2) 5th US Inf Div defends line ZACHARY—ANCHOR.
(3) 9 Dr Inf Div defends line CHRISMAN—YOKE.
(4) 603 AGRA (FA Gp) GS, Beinf fires 2 Div Arty.
(5) 500 Field Engr Regt (Engr C Gp) support 2d Inf Div.

2. MISSION

a. 2d Inf Div organizes and defends position along general line BLATZ (3516)—BUNKER (3648)—CHRISMAN (3898) prior to 180300 April, with 2 Brigades (Inf Regts), 6 Inf Brigade (Regt) on north, 7 Inf Brigade (Regt) on south; 8 Inf Brigade (Regt) in reserve.

b. Overlay P (Annex 1, Operation Overlay).

3. TASK FOR SUBORDINATE UNITS

a. 6 Inf Brigade: Overlay P.
Attch: A Squadron (Cn) 3 Hussars. (House Bn).
2 Field Ambulance (Med Co)

b. 7 Inf Brigade: Overlay P.
Attch: B Squadron 3 Hussars.
3 Field Ambulance

c. Division Artillery:
(1) 24 Field Regiment (Arty Bn): DS 6 Inf Brigade.
(2) 25 Field Regiment: DS 7 Inf Brigade.
(3) 26 Field Regiment:
(a) GS; prepare to support 8 Inf Brigade when committed.
(b) One battery attached 1st Bn, 201st Armd Cav initially, reverts to regiment on passage main line of resistance.
(4) Mortar Regt (Bn):
(a) Regt (—) GS; priority to 8 Inf Brigade when committed.
(b) One troop (Platoon) attached 7 Inf Brigade.
(5) 20 Light AA Regt (AAA AW Bn): Protect in priority occupation of defensive position, artillery positions.
(6) Appendix A. Fire Support Plan (Annex 2).

d. 1st Bn, 201st Armd Cav:
Attch: C Battery, 25 Fd Regt.
C Squadron, 2 Fd Engr Regt.
(1) Cover occupation of Div defensive position.
(2) Withdraw through main line of resistance after 190001 April on order CO 1st Bn, 201st Armd Cav.
(3) Attachments cease upon passage MLR.
(4) Attached to 8 Inf Brigade, upon passage MLR.

e. 2 Field Engr Regt (Engr Bn):
(1) C Squadron (Cn): Attached initially to 1st Bn, 201st Armd Cav.
(2) B Squadron: DS 7 Inf Brig.

f. Division Reserve:
8 Inf Brigade: Overlay P.
Attch: 1st Bn, 201st Armd Cav upon passage MLR.
4 Field Ambulance.
(1) Prepare and occupy defensive positions—See Overlay P.
(2) Prepare to counterattack on division order with one reinforced infantry Bn (1 Black Watch (Inf Bn) reinforced by 1st Bn 201st Armd Cav.

x. (1) Priority organization of position. Protective minefields and wire.
(2) All non-essential vehicles to Div trains.

4. ADMINISTRATIVE AND LOGISTICAL MATTERS

a. Administrative Order No. 25. (Annex 3, Admin) 251.

b. Allocation engineer supplies. See Appendix B. (Annex 4).

c. Div Trains: Vicinity RONSONPOOL (1842).

5. COMMAND AND SIGNAL MATTERS

a. See Appendix C (Under 3, SIG. Annex 5, Sig.)

b. CP. Closes present location, opens BERRYVILLE FARM (2532) 170600 April.

JONES
Maj Gen

Annexes: . . . . .
Dists: . . . . .
Official:
/s/ Green
G3

* Body and ending of Operation Order only are illustrated. Equivalent US units and terms are indicated in parenthesis and underlining. Bold face titles are provided for the information of the reader and would not normally appear in the United States operation order.

OPERATION ORDER* (BRITISH ARMY)

INFORMATION

1. Enemy.
(a) General Situation, see 2 Inf Div PERINTREP No. 63.
(b) 63d Mechanized Div has been identified on Div front.
(c) Unidentified NiNo Div located at AURORA 6325.

2. Own Tps.
(a) I Corps defends line ANCHOR—BLATZ—CHRISMAN.
(b) Flanking Forces — LEFT 5 US Inf Div; RIGHT 9 US Inf Div
(c) Additional Tps
Under Cmd — 1/201 US Armd Regt
In Spt — 603 AGRA; 500 Fd Engr Regt

INTENTION

3. 2 Inf Div will occupy Def area all incl BLATZ 3516—BUNKER 3648—CHRISMAN 3898.

METHOD

4. General outline.
Area will be held with three localities—see Trace "P". Localities will be occupied by 0300 hrs 18 Apr.

5. Grouping.
(a) — 6 Inf Bde, with—
under Cmd from 1900 hrs 17 Apr — A Sqn 3 H; 2 Fd Amb
in direct Spt — 24 Field Regt
(b) — 7 Inf Bde with—
under Cmd from 2000 hrs 17 Apr — B Sqn 3 H; 3 Fd Amb
in direct Spt — 25 Fd Regt
in Spt — B Sqdn 2 Fd Engr Regt; 1 Tp 212 L (Mortar Regt)
(c) — 8 Inf Bde, with:—
under Cmd from 2000 hrs 17 Apr — 4 Fd Amb
under Cmd from relief screening mission (not before 0001 hrs 19 Apr) — 1/201 US Armd Regt
in direct Spt — 26 Fd Regt
in Spt — 3 H less 2 Sqn; Bty 212 L (Mort) Regt less 1 Tp.

6. Bdys and junction Pts—see Trace "P".

7. Div screen
(a) Tps under Cmd — 1/201 US Armd Regt, with: C Bty 26 Fd Regt; C Sqn 2 Fd Engr Regt
(b) Task—will cover occupation of Def Pos
(c) Withdrawal—Not before 0001 hrs 19 Apr on orders OC 1/201 US Armd Regt.
(d) On withdrawal—Div reserve and for counterattack role under Cmd OC 8 Inf Bde.

8. Counterattack force.
(a) Cmd — OC 1 BW (Black Watch)
(b) Tps — 1 BW; 1/201 US Armd Regt
(c) Orders will be issued later.

9. Arty—Fire Plan see Appx A.

10. AA—20 Lt AA Regt.
(a) First priority protect occupation Def Pos.
(b) Second priority protect gun Pos.

11. Div Mortar Regt—See Appx A.

12. Engrs—Priority protective minefields and wire.

13. Allotment of Engr stores—see Appx B.

ADMINISTRATION

14. Adm area RONSONPOOL 1842.

15. Vehs NOT required in Fwd locations to Div Adm area.

16. Adm orders will be issued later.

INTERCOMMUNICATION

17. See Appx C.

18. Main Div Hq closes present location, opens BERRYVILLE FARMS 2552 at 0600 hrs 17 Apr.

/s/ Green (Lt Col)
G50 1
2 Inf Div

ACK
Time of signature . . . . hrs
Time issued to Sigs . . . hrs
Dsl Instrs . . . . . .
DISTRIBUTION . . . . .

FIGURE 2.

ing along lines of logical thinking and to make sure that nothing of importance is omitted from his consideration in the estimation. The form also serves to standardize presentation throughout all echelons and by every member of the service. In the United States Army, a logical and orderly examination of the factors affecting the accomplishment of the mission, in order to determine the most suitable course of action, is termed an estimate of the situation.

An American soldier answering questions asked by Ethiopian officers to enable them to understand the procedures used by UN forces in Korea.—Department of Defense photo.

The British Army does not specify any standard form for the commander to follow when seeking the best solution to a problem. The style and layout is suited to the particular problem, although a written study will follow the normal sequence of any military paper, that is, an introduction, the body of the argument, and a conclusion. In the British Army, a logical sequence of reasoning to the best solution of a problem is termed an appreciation of the situation.

A study of the sequence of logical reasoning to arrive at the best solution in both the United States and British systems reveals that they both have the same line of departure directing attention to the same desired end. However, the terminology and sequence of analysis vary in certain respects as indicated in the abbreviated forms of an estimate (appreciation) of the situation which are shown in Figure 1.

Operation Orders

The form and technique of preparation of operation orders are of particular interest to commanders in a combined force. Basically, the purpose of the order is to enable the plan of the commander to be accurately and quickly understood so as to ensure a co-ordinated and successful action by the entire command. The combined force commander should use technique and terminology that are understandable to the commander of a

subordinate, attached allied unit. Yet, with several of the subordinate units being from the same allied nation as the combined force commander, the "native" technique and terminology are an over-all advantage to all participating units. Therefore, the subordinate, attached allied unit commander should be thoroughly familiar with the military technique and terminology of the allied nation, and be able to interpret the phraseology and terminology into expressions which he and his subordinates have been trained to use.

To illustrate the problem and to emphasize the need for an early liaison and understanding between units in a combined force, a sample operation order, to accomplish the same mission with the same troops, as might be written in British Army and United States Army technique and terminology is shown in Figure 2. Bearing in mind that at the lower unit level operation orders are habitually issued orally by the commander, it is necessary for the allied subordinate unit commander to make notes in such a manner as to facilitate his translating them later into a more familiar form for issuance to his own subordinate commanders.

Summary of Comparison

There is every reason to formulate operation orders, written or oral, in language so clear, and with words so carefully chosen, as to be unmistakable in portraying the interest of the commander, because the success of the combined force may depend upon the clarity of the order.

From a study of the sample operation order it may be noted that all essential elements appear in each of the orders, but the format, terminology, and technique used differ in many respects. This is a basic document which every army, every organization, and every commander and leader of troops must use as a means to bring about "the destruction of the enemy's armed forces and his will to fight."

The illustrations presented for study have made a comparison of only two of many types which are used in the military profession of nations. For the purposes of simplicity, the documents of two nations having a common language have been used. The extent of the problem involved for each individual concerned in small unit combined operations will vary depending upon his command or staff position, and upon his professional knowledge, training, experience, individual personality, and adaptability to the task to be accomplished.

Solutions to the problem of efficient combined operations are simple to state but are not likely to be accepted for many years, even though a great need exists.

Possible Solutions

The first solution to the problem is the adoption of a common international language. In a discussion of "The Language Problem in Relation to Western Defence" appearing in the January 1952 issue of *The Army Quarterly* (Great Britain), the need is expressed as follows:

> . . . Almost daily, the necessity for a common international language grows, and, as scientific progress and economic necessity bring the nations into closer contact, the solution grows more and more urgent.
>
> With the advent of a proposed European army, whatever form it may take, direct communication between individuals of the various nationalities participating will be vitally important to its success. Interpreters will have to be considered as a relic of a bygone age. Translators will always be required, but it is now of the utmost importance that all services in all countries concerned in Western defence should be able to communicate with one another, quickly and accurately. The advantages of direct communication at conferences, order groups, over the wireless, and in the ordinary routine of daily speech are such that the value of an international language needs no further elaboration.

The second solution to the problem is the adoption of standardized techniques, terminology, and format for expression of the military language and documents.

As has been illustrated, a wide variance of expression can and does exist between allied nations who speak a common language.

Conclusion

Until such time as the ultimate solutions to the problem have been accepted, each and every member of the armed services of the allied nations has a duty and responsibility to master not only the art of warfare in the language and doctrine of his own nation, but to take every opportunity to gain an undertanding of the military doctrine, customs, manner of expression, manner of living, and even the temperament and personalities of other allied nations and their people.

One of the most important characteristics of the successful officer today is his ability to improve continuously his techniques and methods, and, at times, almost even his mental processes, not only to keep abreast of the constant changes of modern science, but to effect a harmonious and effective relationship with elements of the armed services of one or many of the *allied nations acting together for the accomplishment of a single mission.*

NEXT MONTH

The next issue of the MILITARY REVIEW will feature the article "Logistical Aspects of Large-Scale Airborne Operations," by Colonel Herbert A. Jordan, an instructor at the Command and General Staff College. Colonel Jordan points out that considerable development will be necessary before large-scale, long-range, independent airborne operations, which require air-transported logistical support over an extended period, can be considered feasible.

"Air Power Difficulties in the Korean Conflict," from *The Journal of the Royal United Service Institution* (Great Britain), will be included in the "Foreign Military Digests" section of the magazine. This article discusses the difficulties in the air war in Korea, with primary emphasis on the things that went wrong, rather than the things that went well.

KOREA
DECISIVE BATTLE OF THE WORLD

Lieutenant Colonel Leon B. Cheek, Jr., *Artillery*
Instructor, Command and General Staff College

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE Korean conflict is now in its third year. Since 25 June 1950 much has been said and written regarding the fighting there. Many soldiers, sailors, marines, and airmen of the United States have participated in the Korean conflict.

This battle has been referred to as the "unnecessary war" and in other terms that are unprintable and unfair. Many of the statements made have been biased or colored by the political affiliations of the individual or group disseminating their views. What one faction has labeled as success, the other has called failure. The reasons given by one person or clique for a continuation of the struggle have been countered by the others as a basis for its termination. The only point of agreement has been on the actual necessity for our intervention in the conflict. However, the methods employed have been subjected to a barrage of criticism.

In general, two courses of action have been advocated:

1. Get to the source of the trouble, and thereby broaden the conflict to the extent necessary to win it.

2. Continue to strive for a peaceful settlement while confining the conflict to the Korean Peninsula.

Advocates of the first plan disagree on just how the conflict should be won, and, with few exceptions, do not have the courage to speak up without the advantage of hindsight.

Although we have been showered with a vast amount of verbalization concerning the Korean conflict, few authors, armchair strategists, or statesmen have attempted to analyze the *true* significance of the military campaign.

What is the significance of Korea? Future historians may claim Korea as a decisive event in the history of the world—the bulwark needed by the non-Communist peoples to reach a decision and enable them to stem effectively the tide of communism.

Of the many battles fought throughout the ages, a very few have been selected by noted historians as decisively affecting the future course of world events. Most of these battles have been of short duration—ranging from a few hours to a few weeks. In modern war it is doubtful that any one battle of a prolonged campaign can be selected as decisive or as influencing the outcome of a war to the extent that it can further be stated that the battle "essentially varied the drama of the world in all its subsequent scenes." We have such a battle in Korea and its significance cannot be disregarded. However, before pursuing this matter further let us look into the past at a military engagement which has been con-

sidered a decisive battle and examine the reasons for its importance.

The Battle of Marathon

In 490 B. C., a council of Athenians was faced by the invading forces of King Darius of Persia. This mighty force, which was arrayed on the plain of Marathon, intended to impose upon the Athenians a special reprisal for the part the Athenians had played in the aiding of rebels and for the burning of the capital of one of the provinces of Darius.

Before the battle of Marathon was fought, the prestige of success and of supposed superiority of race was on the side of the Asiatic against the European. The Persians had succeeded in subjugating the fairest portions of the then known world, while the Greeks, from their geographical position, formed the natural vanguard of European liberty against Persian ambition. The nations around and near the northern shores of the Mediterranean Sea were the first to receive the rudiments of art and literature and the germs of political and social organization from the East.

The Greeks were among these nations but imparted a new and wholly original stamp on all they received. Long before the Persian invasion, the kingly form of government had given way in almost all the Greek states to republican institutions. In literature and science, the Greek intellect followed no beaten track, and acknowledged no limitary rules.

Compare all this with the tendency of Eastern rulers to claim supreme control of education, to stereotype the lines in which literature and science could move, and to limit the extent to which it was lawful for the human mind to inquire. We can thus appreciate the repulse which Greece gave to the arms of the East, and to judge the probable consequences to human civilization, if the Persians had succeeded in bringing Europe under their yoke.

Sir Edward Shepherd Creasy in his book *Fifteen Decisive Battles of the World* sums up the decisiveness of the battle of Marathon as follows:

> The day of Marathon broke forever the spell of Persian invincibility, which had paralyzed men's minds. It generated among the Greeks the spirit which beat back Xerxes and afterwards led on Xenephon, Agesilaus, and Alexander in terrible retaliation through their Asiatic campaigns. It secured for mankind the intellectual treasures of Athens, the growth of free institutions, the liberal enlightenment of the Western world, and the gradual ascendancy for many ages of the great principles of European civilization.

Similarity of Aggressors

It would be difficult to support a claim that conditions in the world today parallel those at Marathon some 2,400 years ago. The struggle today is between the Soviet brand of communism and the democratic principles practiced by the peoples of the free world, and not necessarily a struggle between the East and the West, as is so often stated. The tyranny practiced by the Persians is, however, exemplified by the Soviet masters today in that they, too, control education (and religion), stereotype the lines in which literature and science must move, and limit the extent to which it shall be lawful for the human mind to prosecute its inquiries.

The tidal wave of Communist tyranny, seeking to engulf the world, was met by

Because of the effect which the present conflict in Korea may have upon shaping the course of future world events it may well be listed among the few truly decisive battles to be recorded in world history

the first forceful military opposition by Republic of Korea and United States armed forces, and, it is this initial action in Korea that is worthy of careful analysis in order to evaluate properly the true affect of this action upon current and future trends.

Decisive battles of the world which have occurred down through the centuries have been decided by land forces, sea forces, or both. During the past 40 years, no battles have met the rule for decisiveness laid down by Henry Hallam, the English historian. Therefore, a potent air arm has played no part in deciding a battle of the world because the ascension of air power, to the realm of military operations, has occurred since the beginning of the twentieth century.

A United States infantryman looking for North Korean snipers in a village in Korea.

Air power is still in its infancy but we may be entering the age when air power alone will determine the outcome of military operations; however, this is not in the foreseeable future.

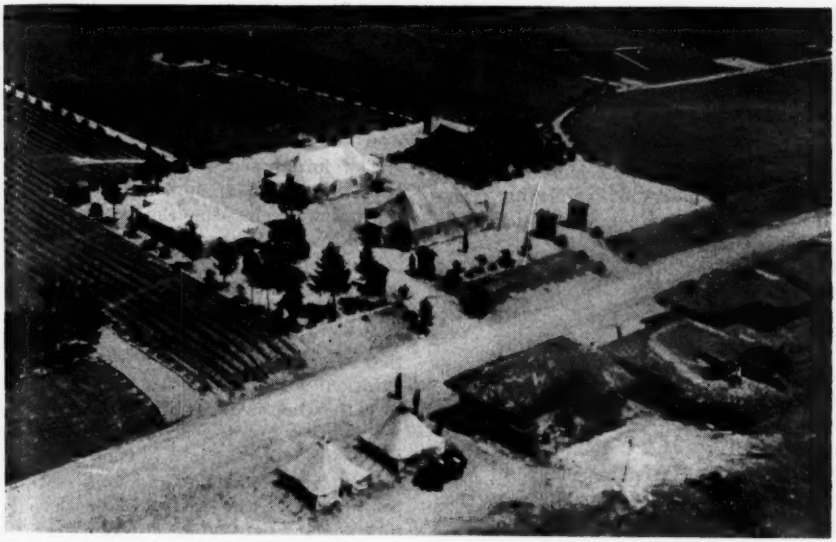
World War II

In recent years we have fought many battles, however, it is doubtful that any of these battles—at least since the turn of the century—have "essentially varied the drama of the world in all its subsequent scenes." One or two battles probably decided the turning point and final victory in World War I, but the outcome was not a decisive battle of the world.

Was there a decisive battle in World War II? It is doubtful that one or even two or three battles can be claimed as decisive battles of the war and they were not decisive in the world sense. It is not intended here to minimize the importance of World War I or World War II because there can be no doubt that both wars reduced the threat of tyranny and upheld the cause of freedom, and, therefore, had a pronounced effect on future world events. However, even so soon after the end of World War II, the following conclusion can be drawn: the crushing of fascism, which the war accomplished, resulted in the creating of a void to be filled rapidly by the threat of communism.

This Communist threat continued to spread as the Soviet Union infiltrated the governments of border nations and seized power by political chicanery or by other means expeditious to the Soviet cause. Concurrently, every effort was made to thwart any or all constructive action attempted by the United Nations Assembly.

By the beginning of 1950, the United States had reduced its military establishment and embarked upon a program of military austerity which threatened to reduce us to a position of impotency. The Soviet Union, in the meantime, continued to build up her own armed forces, particularly air power, with no deterrent to Communist aggression other than the threat of a United States stock pile of atom bombs.



The Korean conflict may be the bulwark needed by the non-Communist peoples to reach a decision and enable them to stem effectively the tide of communism. Above, a view of the Korean armistice conference area at Panmunjom. Below, a North Korean soldier being searched, upon surrendering, by an Australian soldier.—Department of Defense photos.

The Big Test

The year 1950 was obviously the year for the Soviets' big test. The opportunity was there to wreck the United Nations as a potential peace enforcing agency of the world; defy the United States to fulfill foreign obligations and commitments; and test the feasibility of employing satellite forces for further aggression while retaining the Soviet military strength intact, to be committed only if necessary to force a decision.

On 25 June 1950, when the North Korean Communists moved south of the 38th Parallel, the United States took the initiative in answering the call and acted with decisive determination.

By October 1950, the objectives placed for test by the Soviet Union had resulted in failure and the Communist forces committed were being decisively defeated. A major change in Communist-dictated policy was necessitated by the military reversal suffered.

The United States was neither mentally nor physically prepared to fight a battle in Korea or elsewhere. Our available military equipment was largely that which had been left over from World War II. Our active units were understrength. Our men were not instilled with the will or the desire to fight, and no incentive existed to create this will. This was substantiated by the fact that 72 hours prior to the time they were involved in a shooting war in Korea the major concern of many of our soldiers was the quality of food in the mess hall.

Some 10 days after the initial elements of the United States 24th Infantry Division were committed in Korea, the remainder of that understrength division was engaged with the enemy, and every battalion was attempting to defend a front greater than that normally allocated to a full-strength division. Artillery was spread so thinly that it frequently could reach the flanks of its supported unit with only one or two pieces. Engineers were employed as infantrymen in addition to their other duties. This inadequate force suffered many defeats, but still managed to regroup, pull together, and fight again over the long road from Osan to Taejon.

The initial shock of battle was great when American troops first encountered the overwhelming superiority in numbers of the North Korean Communists, and it is here that the American soldier's strong will and great determination made his indelible impression on the pages of history. A few soldiers were able to do only that which was necessary for self preservation while others no longer seemed to care. On the faces of many one could see nothing but the blank expression of lost hope. Fortunately, a majority appeared to be invincible, and some of these possessed a certain courage and tenacity that enabled them to go on even when reduced to fighting with rocks or bare fists.

The Decisive Phase

When the 24th Infantry Division withdrew from Taejon on 21 July, contact had been established with elements of the United States 25th Infantry Division. The next day these two divisions were reinforced by the 1st Cavalry Division (Infantry) in the vicinity of Yong Dong. Although it did not appear so to the forces actually engaged with the enemy, this period was a major turning point in the early days of the Korean campaign and assured the Republic of Korea and United States forces of adequate physical means to retain a beachhead on the small peninsula.

True, the fighting was extremely severe from that time until October 1950, however, the enemy had missed his opportunity to occupy the whole of the Korean Peninsula by failing to exploit his early successes. Although some of the most severe fighting in the history of warfare occurred during the winter of 1950-51,

the battle which most influenced the course of world events was fought during the first 3 weeks of July 1950 by greatly outnumbered and outpowered United States and Republic of Korea forces.

United Nations Action

Korea in itself may or may not be important. It is what has happened there and the service that has been provided the freedom loving nations of the world that bear the significance of importance. Here, too, during those weeks in July, the die was cast and the incentive developed to which members of the United Nations responded. The Republic of Korea forces, which had been badly hurt by the initial North Korean attack, developed into an army of importance. The United States once again rose from the status of a military weakling to that of a potent military force, and, along with other non-Communist nations, awoke to the necessity for armed opposition to Soviet-sponsored aggression. Thus, in a few short weeks, determined opposition by a few provided the necessary motivation for the forces opposed to communism.

Members of the United Nations were called upon to stand up and be counted, to assure the effectiveness of the United Nations concept, or lose it forever. This can be better expressed with the words of the late Reverend Peter Marshall, former Chaplain of the United States Senate, when he prayed, "Dear God, our Father, deliver us from patience which is akin to cowardice, let us be either hot or cold, let us stand for something, lest we fall for anything." The United Nations force finally reached a total of 22 nations working together as an effective fighting machine. While considerably smaller than those of the United States and the Republic of Korea, the contingents of other United Nations members have contributed to the common United Nations effort, and they have distinguished themselves in courage and fighting ability.

The Soviets learned, early in the Korean campaign, that they had not only failed to destroy the United Nations, but had strengthened it. They learned that the United States could not be forced into submission and that the scheme of employing satellites to further the cause of Communist domination placed a far greater strain on the tentacles of control than they had anticipated. Had any doubt existed in the minds of free people as to the designs of the Soviet masters before, certainly none can exist now.

Turkish troops manning a front-line position during the recent fighting in Korea.

It is not the purpose of this article to determine whether we could have avoided the Korean conflict by the retention of troops in Korea. Neither is it the purpose of this article to conjecture on whether we would have ended the conflict by retaliation in Manchuria and the Chinese mainland after the Chinese Communists intervened in November 1950.

There are many and varied opinions as to the future courses of action to be taken

in Korea: continue the peace talks, discontinue the peace talks, launch an all-out offensive, or withdraw from Korea entirely. If we accept Korea as a check upon Communist aggression, then the sacrifices which have been made there have not been in vain. The United States and other free nations are, today, in a better position to retard the growth of communism than at any time since the end of World War II.

We would lose face if we were to withdraw or be forced from Korea now; however, it would have been far worse had we failed to take action or been defeated earlier. Korea may be the turning point in the stemming of Soviet aggression and the initiative may soon be on the side of democracy. Therefore, Korea justly deserves to be considered among the decisive battles which have "essentially varied the drama of the world in all its subsequent scenes."

Members of the military establishment can profit from a study of the military and political implications of the Korean campaign. Should we have used the means at our disposal to attempt to gain a quick and decisive victory? Are the truce talks leading us in the right direction? Should we continue them? Is it possible to negotiate with communism? Should we refrain from interfering militarily anywhere unless we are confronted with aggression upon our own shores or possessions? Is there a time when it is not desirable nor advantageous to gain a decisive victory in war?

Future Koreas

What has happened in Korea might have happened in Iran or Greece or any other place. Officers serving in what they may consider rather insignificant positions today may be studying the facts bearing on another Korea tomorrow. It would be profitable to draw sound conclusions regarding the successes and failures of today.

A perusal of available military and civilian publications, during the past 3 months, indicates that material from the MILITARY REVIEW was reprinted in the following countries:

Australia	**Chile**	**Italy**	**Portugal**
Belgium	**El Salvador**	**Norway**	**Switzerland**
Brazil	**Great Britain**	**Pakistan**	**The Netherlands**
Canada	**Honduras**		

The Editor

GREENLAND'S GLOBAL GATEWAY

OUT of the frozen wastes of Thule, Greenland, is emerging one of the United States largest and most important air bases, Thule Air Base. After months of planning and almost 2 years of hard work, under extreme arctic weather conditions, the gigantic engineering project is nearing completion.

With its proximity to the North Pole, only 930 miles, the air base will be the gateway, or key point, of numerous global air lanes. This strategic air base is a ready and working northernmost outpost of the United States jet fighter defense and an obvious staging ground for Air Force intercontinental bombers. From this base, the United States Air Force, if attacked, could launch counterattacks by exploiting its geographical advantage. From Thule, Greenland, it is approximately 2,750 miles to Moscow; 1,790 miles to Murmansk; 2,110 miles to Berlin; 2,330 miles to New York; 2,320 miles to London; 2,360 miles to Detroit; and 4,110 miles to Vladivostok.

In addition to strengthening the United States northernmost defense perimeter, the base will enable the expansion of air rescue facilities in the far north, improve air weather service networks, and provide fuel and equipment for extended military flight operations.

This northernmost outpost has been carved out of a few square miles of one of the rare sizable flat areas along Greenland's jagged west coast. The rapid construction of the base was made possible by the combined effort of the United States Army Corps of Engineers, the Military Sea Transportation Service, the Military Air Transport Service, and private construction companies on contract.

All major outdoor construction was done during two 6-month periods from April to October. Major construction is impossible during the winter months, because of the low temperature (as low as 43 degrees below zero) and the permafrost (permanently frozen ground).

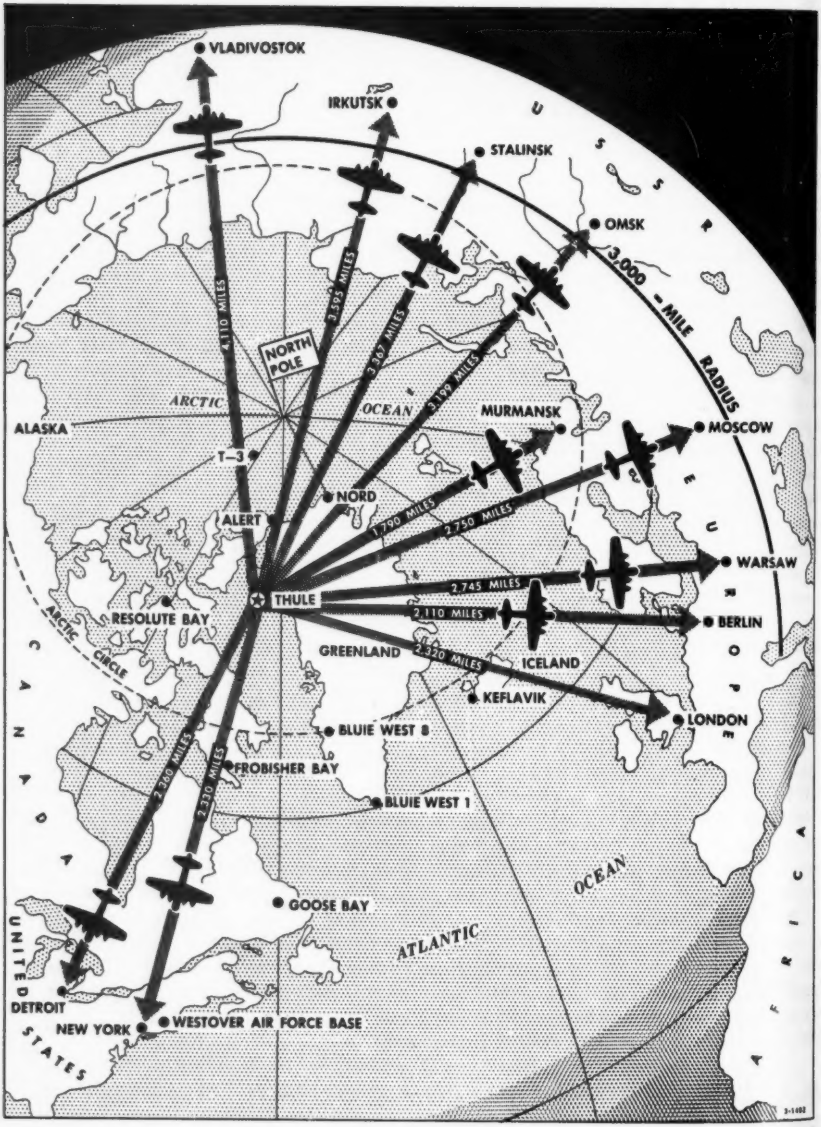
The Military Air Transport Service and the Military Sea Transportation Service have been providing a steady flow of vitally needed personnel, supplies, and equipment.

When the ice pack becomes thick—it begins in late September and lasts until early spring—the movement of ocean vessels becomes impossible and the air base depends upon the Military Air Transport Service for movement of fresh food, personnel, and key items of equipment. All of this valuable cargo is brought into Thule by large Air Force planes.

Since April 1951, more than 1,500 items of construction equipment have been moved into this barren area of Greenland. These items include heavy-duty trucks, bulldozers, steam shovels, carryalls, cranes, and graders.

The construction of the Thule Air Base, considering the extreme weather conditions and its geographical location, is the achievement of an engineering and supply feat which has reached tremendous proportions. It is indeed "in the center of the world of the air age."

Thule Air Base, strategically situated inside the Arctic Circle, will strengthen our northern defenses, provide fuel and equipment for extended military operations, and improve air weather service networks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BERLIN
RESOLUTE BAY
ARCTIC CIRCLE
GREENLAND
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ICELAND
KEFLAVIK
LONDON
BLUIE WEST 8
FROBISHER BAY
2,340 MILES
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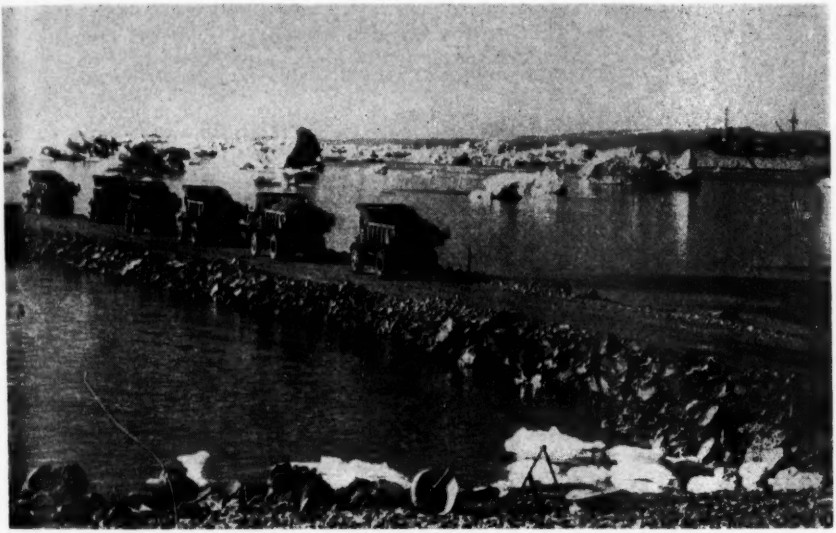
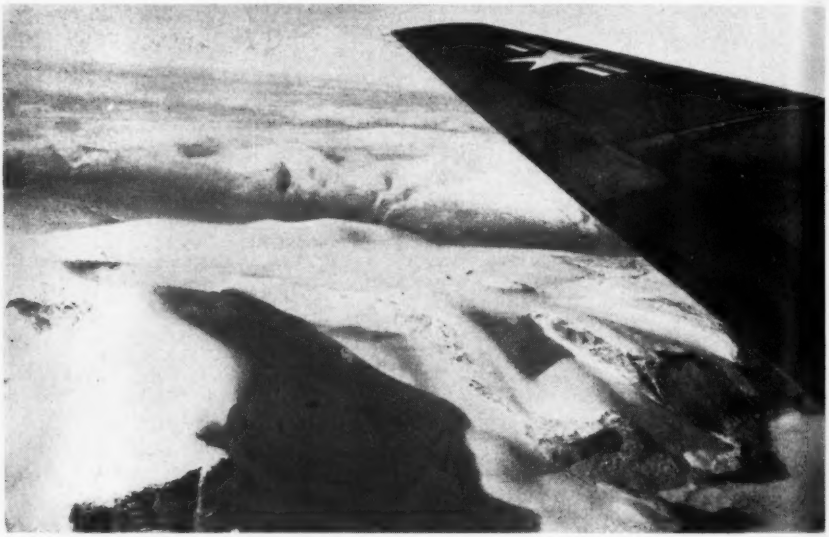
WESTOVER AIR FORCE BASE



The Thule Air Base is in a flat area in the frozen terrain along Greenland's jagged west coast. Above, Army engineers constructing a large transportation causeway in the arctic air base area. Below, a Military Sea Transportation Service supply convoy breaking through the seasonal ice pack while en route to Thule.—Department of Defense photos.



When the ice pack is thick, the Thule Air Base depends upon the Military Air Transport Service for the movement of personnel, supplies, and equipment. Above, an Air Force transport plane flying over the frozen wastes of Greenland. Below, a *C-124 Globemaster* and two *C-54 Skymasters* being used in the Thule airlift.—Department of Defense photos.

More than 1,500 items of construction have been moved to Thule, Greenland. Above, Army engineer personnel unloading vehicles which will be used in completing the construction of the advance air base. Below, Army engineers assembling steel to be used in the construction of the many aircraft hangers at the air base.—Department of Defense photos.

The Military Sea Transportation Service has provided the Thule Air Base with vitally needed personnel, supplies, and equipment. Above, MSTS cargo vessels heading for the air base area with supplies. Below, an *HTL-4* helicopter flying past a glacier as it reconnoiters ahead of a Navy convoy heading for Thule.—Department of Defense photos.

Destruction--A Factor of War

Lieutenant Colonel Coleman W. Thacher, *Artillery*
Instructor, Command and General Staff College

SUCCESS in war will depend to a large degree on our ability to isolate and evaluate the factors which have a direct influence on the conduct of war. From the earliest days, the facts associated with military operations have been the subject of constant study. An accumulation of information has resulted from which conclusions can be drawn as to the cause for success or failure on the battlefield. The preparation for war and the employment of combat forces demand a continuing search for those elements in a situation which contribute to produce the desired result. The effective solution of military problems requires that a sound decision be made on what is to be done, however, the soundness of the decision and the decisiveness of the resulting action will depend on the accuracy with which the pertinent factors were analyzed.

The term factor used in the military profession includes those causes which operate to bring about as their direct or indirect effects the conditions which go to make up the situation. The situation will vary in accordance with the combination of factors which distinguish one situation from another. Whether a factor is pertinent or not will depend upon whether it has a direct bearing on the accomplishment of the mission assigned.

The element of destruction is one of the fundamental considerations which form the basis for successful military operations. It is a factor which exerts a profound influence on plans and operations; however, it is often given only a cursory examination because it is considered more constant than changing in its influence. The current concept that the ultimate objective of all military operations is the destruction of the enemy's armed forces and his will to fight indicates this is a factor of great importance affecting the result of combat operations and, therefore, one which demands careful consideration in every situation. We tend to consider, therefore, the destruction factor as one which is ever present, affecting all military thought and action equally.

The true impact of destruction must be understood before it can be applied effectively in a particular situation. In one sense, it can provide over-all guidance to military action because the basic consideration for the military force is the reduction of the enemy's will to resist through the application of combat power. However, in another sense, it is but one factor among other factors such as terrain, relative combat power, dispositions, and logistics which require analysis to provide a basis for decisive action. Therefore, the question is what is the meaning of destruction; what is its impact on plans and operations; and how can it be analyzed as a factor in modern warfare?

The element of destruction is a fundamental consideration which may exert a profound influence on military plans and operations. Too often it is given only cursory examination because it is considered constant

Destruction and the Objective

A point of departure for any discussion on a factor influencing the course of warfare is found in the principle of the objective, which requires that all efforts be directed toward a decisive point to achieve conclusive results. The principle can provide guidance here because all factors affecting the result of military action should be analyzed in this light to determine their relative importance.

In the logical sequence of reasoning which leads to a decision, the commander breaks down his assigned mission into its component parts to determine which factors affect the plan, and then he places them in logical sequence so that sound deductions can be made. Each deduction then is made in the light of those principles which establish the correct relation between cause and effect, and also have a direct bearing upon the mission. The weight assigned to each factor will vary with every situation.

It appears that a danger exists in applying any factor equally to all circumstances without a proper analysis. This may result in an overemphasis on a particular factor. A clear understanding of the meaning of destruction and its impact upon the course of military operations becomes a prerequisite to evaluation.

Historical Background

Historical background provides an empirical source for determining the meaning of destruction as it applies to military operations. Sun Tzu, writing in 500 B. C. concerning the art of war, considered that "supreme excellence" was realized in breaking the resistance of the enemy without fighting. He explains that "the highest form of generalship is to balk the enemy's plans. The next best is to prevent the junction of the enemy's forces. The next in order is to attack the enemy's army in the field. The worst policy of all is to besiege walled cities."

It is apparent that the Chinese soldier realized that the use of violence against the enemy was required, but he also emphasized the "supreme excellence" of the bloodless victory. Within this concept many operations may fall—for example, cutting lines of communication and disrupting sources of supply, as well as rapid maneuver to *cut off* or isolate the enemy force, thereby convincing the enemy commander that any further armed resistance is futile.

This concept was successfully carried out in the Pacific theater during World War II where eventual success came without annihilation or destruction of the entire hostile force. Effective and decisive action can be achieved by breaking the resistance of the enemy without fighting. This is waging "war by stratagem."

The greatest triumph of the elder Moltke was the capitulation of the French commander at Sedan in 1870, which was accomplished practically without bloodshed. Hitler's conquest of France in May-June 1940 was the resounding climax to a series of virtually bloodless victories. However, such a line of thinking must be adopted with caution, since the course of modern warfare has demonstrated that it is dangerously unrealistic to plan for a bloodless victory without providing first all the means required for actual and complete destruction.

At the opposite extreme Clausewitz, who remains a living influence on modern military thought, emphasized the violent nature of war. He approached war as a philosopher, believing that the "nature of war" must be understood before any theory can be developed. He believed that "the destruction of the enemy's military force is the leading principle of war . . . and destruction of the enemy must be effected principally by means of battle. Let us not hear of generals who conquer without bloodshed. If a bloody slaughter is a horrible sight, then that

is a ground for paying more respect to war, but not for making the sword we wear blunter and blunter by degrees from feelings of humanity, until someone steps in with a sword that is sharp and lops off the arm of our body. War is an act of violence to compel our opponent to fulfill our will."

Bismarck's policy of "blood and iron," and Hitler's philosophy of destruction in World War II, are vivid and realistic evidence of this concept.

Jomini's Concept

It remained for Jomini, viewing war from the empirical standpoint of the scientist, to come closest to our modern meaning of destruction. His basic idea, portraying the practical spirit of modern war, advanced one great principle of war as underlying all other—the principle of the objective. Jomini's explanation of the application of this principle, designed to achieve success in war, sheds a clear light on the relationship of destruction to the basic principle. Jomini stated that it was necessary to:

1. Carry the mass of the forces of an army successively upon the decisive points of a theater of war, and as much as possible upon the communications of the enemy, without endangering your own.

2. Maneuver in such a manner as to engage this mass of the forces with only a fraction of the hostile army.

3. Direct equally the mass of forces upon the decisive point of the field of battle, or upon that point of the hostile line which it is important to overwhelm.

4. Plan so that those masses be not merely present at the decisive point, but that they go into action there with energy and power in such a manner as to produce a co-ordinated effort.

The selection of the decisive point indicates that "good choice of those points of maneuver is the most valuable talent of a general, and the surest pledge of great successes."

Under this concept the objective could be the enemy, his means of support, or his geographical location, depending upon the situation.

The Current Concept

A broad meaning of destruction has developed, aimed at the reduction of the opposing will to resist—and within this concept it is possible for us to consider and utilize the various gradations of meaning from the *bloodless victory* of Sun Tzu to the *annihilation by combat* of Clausewitz. It becomes possible to adopt many courses of action which contribute to obtaining the decisive objective—destroy the will of commander, surround his force, cut his lines of communication, or destroy his means to wage war (whether material, physical, or moral). This meaning of destruction is not constant, and will vary with the situation; therefore, it is not possible to determine one most effective meaning for all situations.

The Impact of Destruction

The evaluation of the impact of destruction on military action must consider the relationship existing between destruction and terrain, since a close relationship exists between these two factors. It is interesting to note that whenever destruction is regarded as a constant, terrain often is overemphasized. Terrain is in many ways the best ally of the soldier, but it also can exert a "tyrannical influence" upon all military operations. The great commanders of the past have made it their ally, and, in the future, no commander can be successful who does not understand its use to aid his operations and to restrict those of the enemy. Terrain, however, should take its place along with destruction to be weighed in light of the mission and the situation. Terrain, effectively used,

gives us those advantages which enable us to gain superiority over the enemy. Terrain provides the facilities for movement of combat forces and their logistical support, and it is actively considered at all stages of planning and execution. However, it is only a factor and is not always the dominant one. Destruction, on the other hand, will influence our actions depending on the importance placed upon reducing the enemy's will to resist.

Emphasis

The emphasis on terrain or destruction may change as conditions change and this is especially true during the course of operations. Depending upon the level of command, one or the other may be of greater immediate importance. The degree of emphasis required can be determined only by logical analysis; however, failure to consider where the emphasis must fall results in lost effectiveness. The interrelationships existing between these two factors require that neither be omitted from the analysis.

Mission

When the mission is to seize terrain, destruction may be considered only insofar as it assists in the accomplishment of the mission. If destruction is the assigned mission, then all efforts must be guided in that direction. If both are included, an entirely different analysis is required. The only unacceptable thinking is to regard terrain as the reason for the existence of maneuver, rather than an aid to maneuver having an entirely conditional and relative value.

An operation directed against the armed forces and one which aims at territorial conquest are intimately related, and the results of the one necessarily influence the progress of the other. There are, therefore, even within the annihilation by combat concept, territorial and geographic objectives which irresistably thrust themselves forward. The most difficult problem lies in determining the relative importance of both, so that the operation will reflect a profound understanding of how all of the factors can be applied most effectively.

Not a Constant Factor

It appears that destruction is not a constant factor, unchanging under all conditions and circumstances, either concerning meaning or importance. Destruction demands positive consideration whenever a decision is made or a mission assigned. This holds true at all levels of command, for, in the words of Sun Tzu, "there are no constant conditions in warfare."

A commander cannot expect to receive intelligent and effective support from subordinate commanders unless he makes clear the intent and character of the planned operation. The subordinate is assigned an objective, but in addition he must be informed of the purpose of attaining the objective in terms of the nature of the military result which the immediate superior has decided to bring about.

From such a viewpoint, the estimate leading to the decision should include an analysis of destruction. Inasmuch as the mission assigned has a direct effect on subsequent decisions it should also include the destruction element, or be omitted by design to indicate that for this operation seizure of terrain, and terrain alone, is the decisive objective. Missions directed toward terrain occur more often at the division level and below, since the larger forces, involved at corps and army levels, normally provide greater opportunity for destroying the enemy and his will to resist. In addition, it is extremely difficult at the lower levels to evaluate correctly the relative influence of destruction upon operations, inasmuch as terrain exerts such a tremendous influence at this echelon. The difficulty should not be resolved by overemphasis on any factor as a sub-

stitute for more effective evaluation. It appears that an example of this approach results where the decision is made and then destruction superimposed as words in the missions assigned.

The Mission of Destruction

The greatest freedom of action is given to the subordinate commander whose mission is the destruction of the enemy. When General Grant finally gave General Sheridan the mission of driving General Early out of the Shenendoah Valley, his only orders to Sheridan were: "Move out and whip Early." At a later time when this order was being discussed with Grant, an officer questioned the general with the remark, "I presume the actual form of the order was to move out and attack him," to which Grant replied, "I mean just what I say, I gave the order to whip him."

Assigning destruction as the sole mission indicates that the commander has complete confidence in the subordinate, giving him freedom of action where terrain will be utilized in any way which will assist him in the accomplishment of that mission.

Terrain Imposes Restrictions

The greatest restriction is imposed upon the actions of a subordinate commander when the seizure of terrain alone is assigned as the mission. A great degree of guidance is thereby provided, and is justified where seizure of specific geographical areas is essential to assist in the accomplishment of the over-all task of a larger force.

The struggle around Monte Cassino in World War II is an example of how seizure of terrain alone was essential since it controlled the road to Rome, and thereby provided the key to that portion of the Gustav Line lying north of the Liri River. The size of the hostile force that will be destroyed by the seizure of such an area is of small importance. In fact, the willingness to take sizable losses compared with those of the enemy in such an operation indicates that the destruction of the enemy may be of only relative importance. In early February, before the Cassino objective was seized, the II Corps, part of the Fifth Army, had been reduced to about 25 percent of its fighting strength.

Here the task assigned to subordinate commanders by the Fifth Army properly omitted destruction as a part of the mission, and under the circumstances destruction as a factor entered into the analysis by the division commander only insofar as destruction of the enemy force assisted in gaining the required terrain objective. Conversely, inclusion of destruction in this type of mission will have adverse results if it causes a diversion of any part of the effort to destroy—at the expense of attaining the real goal which is seizure and retention of a particular geographical area.

A Historical Example

An appropriate account of this latter point is found in Jomini's *Life of Napoleon*, where Napoleon, in discussing the attack toward Moscow, relates, "The Army of Barclay was first seen encamped on the heights on the road to St. Petersburg . . . We hoped for a moment to cut him off from the road to Moscow and drive him back to the north . . . Ney and Murat were ordered to examine these two roads . . . Our columns of the left now observed a division of infantry in an intermediate position near the Stabna. Ney immediately ordered it to be attacked. This was unfortunate, for if he had marched directly to Lonbino on the road to Moscow, we should have reached that place as soon as the enemy, and have engaged the Russians while they were making an extended flank movement."

The Commander's Analysis

A careful analysis of the meaning and impact of destruction will assist the com-

mander in determining whether or not destruction should be included in the mission. When the seizure of a terrain feature is a logical mission, the method in which its seizure provides for or facilitates the destruction of the enemy forces may be included. Such a mission, where both terrain and destruction are included, is probably the most difficult to analyze in order to determine the meaning and intent of what is to be accomplished. However, it indicates that prior analysis by the superior commander has determined that primary emphasis cannot be placed on terrain or destruction, but may be placed on either one as the situation demands. In this way, even though terrain is assigned as part of the mission for control purposes, the force commander may engage in operations aimed at destruction of the enemy force, thereby delaying temporarily the seizure of the terrain objective. It is suggested that conflicts in this area of consideration should be resolved in favor of destruction, because the enemy's combat troops constitute his principal means of waging war and determine his effective military strength. To destroy the men is to destroy the most important element of any army. It would be unsound to fight constantly for terrain features or geographical areas.

The omission of destruction from the mission does not mean that it is no longer considered, for it must find a place in the estimates and decisions of the commander. If omitted by design, it means that the most important element in the mission is clearly stated, and the decision which follows must be based upon it. Precise thinking will distinguish between those situations where destruction is required in the mission and where it is not. However, destruction of the enemy's will to resist is a large part of the purpose of any military action, even though objectives other than destruction may become predominant from time to time.

Types of Operations

The enveloping action typifies the type of action where terrain and destruction are included in the mission, for here the enveloping force cuts off the enemy from his route of escape or turns him from his position, thereby forcing him to fight with a change of direction. Meanwhile, the holding force seeks to immobilize the force holding terrain and to gain the dominant observation which will make the destruction more nearly complete. Here, the commander must provide in his plans for the destruction of the enemy's will to fight, and at the same time plan for the seizure of critical terrain.

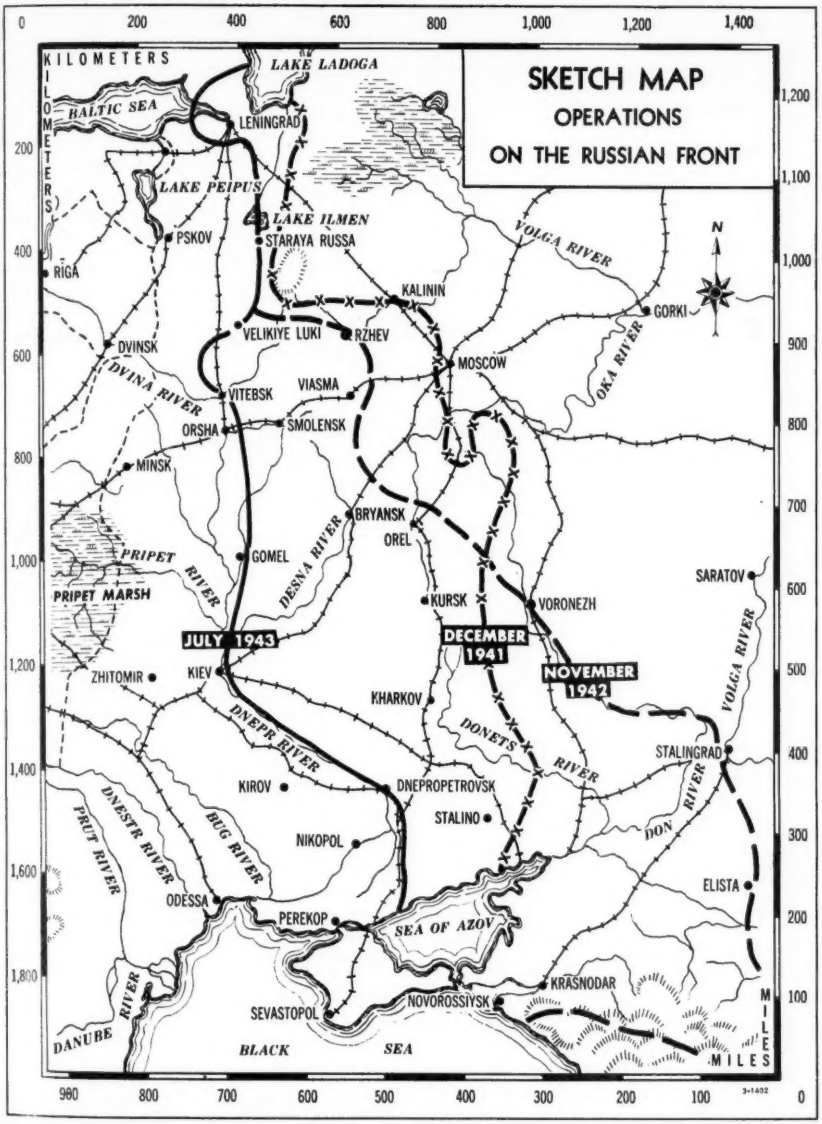
The penetration, depending for success upon co-ordinated combat power, requires great emphasis upon destruction, because the conditions favorable to success are surprise and fire power to destroy or neutralize the hostile force. The destruction of the enemy in this situation becomes a matter of primary consideration and should be reflected in the planning.

In defensive action, planning may be designed to create enemy concentrations which can be effectively destroyed by massed fire power while counterattacks are employed to destroy the enemy if he penetrates the main battle position. The degree of emphasis changes with the conditions of the situation and a careful analysis of destruction is required in each.

The Negative Aspect

This discussion of destruction as a factor of war has been cast in a positive atmosphere; however, a negative aspect does exist and should not be overlooked. It is graphically illustrated by Napoleon in his evaluation of the Battle of Borodino before his entry into Moscow:

"This memorable battle which we had so ardently desired was far from accomplishing my object; I had hoped to fight it in Lithuania, and make it decisive, but I found it 200 leagues in the interior, and


SKETCH MAP
OPERATIONS
ON THE RUSSIAN FRONT
KILOMETERS
MILES
LAKE LADOGA
BALTIC SEA
LENINGRAD
LAKE PEIPUS
LAKE ILMEN
STARAYA RUSSA
PSKOV
RIGA
KALININ
VOLGA RIVER
GORKI
N
VELIKIYE LUKI
RZHEV
DVINSK
DVINA RIVER
MOSCOW
OKA RIVER
VITEBSK
VIASMA
ORSHA
SMOLENSK
MINSK
BRYANSK
OREL
PRIPET RIVER
PRIPET MARSH
GOMEL
DESNA RIVER
SARATOV
KURSK
VORONEZH
JULY 1943
DECEMBER 1941
NOVEMBER 1942
VOLGA RIVER
ZHITOMIR
KIEV
KHARKOV
DNEPR RIVER
DONETS RIVER
STALINGRAD
KIROV
DNEPROPETROVSK
STALINO
DON RIVER
DNESTR RIVER
BUG RIVER
PRUT RIVER
NIKOPOL
ELISTA
ODESSA
PEREKOP
SEA OF AZOV
KRASNODAR
SEVASTOPOL
NOVOROSSIYSK
DANUBE RIVER
BLACK SEA
3-1402

gained no other trophies than a field covered with dead and wounded."

This was a curious application of the negative aspect of destruction in which the friendly force suffers destruction by striving to destroy the enemy.

Examples From World War II

Examples of the negative impact of destruction are not lacking in World War II. Subsequent to the successful campaign in the Balkans, the Germans turned their attention toward Crete as the key to the control of the air in the Mediterranean area. An airborne assault on the island ultimately succeeded in its capture, but not until the Germans had sustained a loss of 15,000 men and 150 air transports. Here was a degree of destruction which resulted in the German's inability to employ large-scale airborne operations again. The capture of Okinawa cost us approximately 50,000 casualties, together with vast equipment and matériel losses. An evaluation of these historical examples indicates that destruction can assume a negative aspect which must be understood and avoided if successful military operations are to be achieved.

German-Soviet Example

One final example illustrates the consequences of a failure to evaluate the factor of destruction. In the German campaign against the Soviet Union in World War II, the strategic plan provided for a triple penetration by three army groups directed against the cities of Leningrad, Smolensk, and Kiev, with the objective of destroying the Soviet Army. This was in accord with the understanding that the Soviet Army must be destroyed, as the German High Command visualized that the Soviet forces could be found and forced to fight on the road to Moscow. In fact, following the reduction of Smolensk with the vast destruction of the Soviet forces in August 1941, the Soviets have stated that they firmly expected a resumption of the drive on Moscow and massed a large part of the forces available for the defense of the capital. The sketch map on page 39 shows the extent and success of the offensive which was based on an accurate analysis of destruction as the operational concept. However, at the time when the offensive was approaching Moscow, a period of indecision resulted, brought about by a conflict of views within the German command concerning the future course of the campaign. Hitler, influenced by three failures to trap the Soviet forces on the road to Moscow, determined to turn south to the conquest of the Ukraine and the capture of the oil fields in the Caucasus. This meant an apparent change of emphasis from destruction to terrain, even though the initial German concept, like that of Napoleon before them, was that the Soviet Army must be found and forced to fight a decisive battle. The sketch map shows the course of the action and its southwestern course oriented on geography. It resulted in a tremendous waste of combat power and the eventual failure of the entire effort.

For the Germans, the offensive to the south, to seize terrain, ground to a halt in the face of the epic defense of Stalingrad by the Soviets, resulting in a degree of destruction from which the German Army did not recover. Failure to make an accurate analysis of destruction had made its contribution to the eventual destruction of the German forces.

Conclusion

The element of destruction is one of the fundamental considerations which form the basis for successful military planning and operations. The meaning of destruction and its impact upon military operations can vary over a broad area depending on the objective being sought. A danger exists in the application of destruction equally to all circumstances,

without careful consideration as to relative value in the existing situation. Failure here can preclude success upon the battlefield which is caused by overemphasis upon other factors.

The inclusion of destruction in the mission will depend upon the objective sought in the operation, and effective guidance to subordinate commanders should be provided in this manner. A supreme commander gives greatest freedom of action to his subordinate by assigning a mission to destroy the hostile force and his will to resist. Maximum restriction results when the mission is to seize terrain objectives. The most difficult mission to analyze is the one directing the seizure of terrain and the destruction of the hostile force.

The factor of destruction demands active analysis in each situation to ensure that decisive results are achieved.

INFORMATION FOR CONTRIBUTORS

The MILITARY REVIEW has received frequent inquiries from prospective authors as to the type and format of articles desired for publication in the magazine. In order to assist such persons, and possibly encourage other potential writers, the following information is published as a guide:

Articles should be of general interest to the military service at large, emphasizing new ideas or developments in command and general staff methods and tactics, or illustrating lessons learned in combat. Appropriate photographs, charts, rough sketches, or maps should be included whenever possible.

No limitation is imposed upon the scope of the material submitted except that it be of interest to the command and staff level of a division or larger unit, and have no security restrictions. Original thought is highly desirable, as the objective of the MILITARY REVIEW is to disseminate modern military thought and current Army doctrine and provide a forum for articles which stimulate military thinking. Queries concerning specific subjects are invited.

Manuscripts should be submitted in duplicate, triple spaced on legal size paper, and include a short biographical sketch of the author, stressing schools attended, combat duty, and assignments since 1941.

The Armed Forces Staff College

Rear Admiral E. R. McLean, Jr., *United States Navy*

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

As a result of World War II experiences, the leaders of our armed forces recognized that any large-scale operation of the future would involve a joint effort on the part of two or more of the armed services; hence, the establishment of an institution of learning for instruction in joint operations was indicated. During World War II, this need was met, in part, by ANSCOL (Army-Navy Staff College) which was composed of Army, Navy, and Army Air Force officers assembled together in Washington for the study of joint problems. ANSCOL was a wartime expedient, did not possess a permanent home, and in other ways was of a temporary nature. Accordingly, on 28 June 1946, the Joint Chiefs of Staff approved the report of a special committee and directed that the Armed Forces Staff College (AFSC) be established.

On 13 August 1946, the Armed Forces Staff College was established at Norfolk, Virginia. Under the directive providing for the establishment, it was set forth that the Armed Forces Staff College be a joint institution under the jurisdiction of the Joint Chiefs of Staff, with responsibility for operations and maintenance assigned to the Chief of Naval Operations. To discharge this responsibility for operations and maintenance, the Secretary of the Navy, upon the establishment of the college, established the United States Naval Administrative Command at the Armed Forces Staff College.

The Mission

The mission of the Armed Forces Staff College as prescribed by the Joint Chiefs of Staff is: "To train selected officers of the armed forces of the United States in joint operations." The scope of instruction, also prescribed by the Joint Chiefs of Staff, includes:

1. Characteristics, organization, and employment of Army, Navy, and Air Force forces and the relation of those forces to each other.
2. Joint staff techniques and procedures.
3. Trends of new weapons and scientific developments and their effect upon joint operations.
4. The organization, composition, and functions of theaters of operations and major joint task forces, and the responsibilities (strategical, tactical, and logistical) of the commanders thereof.
5. The preparation of plans for amphibious and airborne operations involving the employment of joint forces.

To carry out the mission and present the scope of instruction, the Joint Chiefs of Staff determined that the office of the commandant be rotated among Army, Navy, and Air Force officers, with two deputy commandants, one from each service other than that of the commandant. The commandant has the rank of major general, rear admiral, or higher, and the deputy commandants are of appropriate

flag or general officer rank, with the remainder of the faculty being of approximately equal Army, Navy, and Air Force representation. The first commandant was Lieutenant General Delos C. Emmons, United States Air Force, who was succeeded in 1948 by Vice Admiral J. L. Hall, Jr., United States Navy. The present commandant is Lieutenant General A. D. Bruce, United States Army, who completes the cycle of service rotation.

Faculty Organization

The faculty is composed of experienced officers—colonels and lieutenant colonels, captains and commanders—with equal representation from the Army, Navy, and Air Force. Of the present Navy faculty members, there are 12 line officers (2 being naval aviators and 1 an experienced submarine officer), 1 officer each from the Medical, Supply, and Civil Engineer Corps, and 3 Marine officers (1 being a naval aviator). Academically speaking, the faculty is divided into six divisions:

1. Personnel, civil affairs, and military government.
2. Intelligence.
3. Plans and operations.
4. Logistics.
5. Communications.
6. Research and development.

The heads, or directors, of divisions are equally divided among the three services, with the complement of each division having equal representation from each service. The assistant directors of each faculty division are from the services other than that of the director, and the entire system is rotated frequently so that full representation is given to each service at all times. A review board of one senior officer from each service is constantly busy reviewing textbooks and studying means of improving the course of instruction.

Instruction

The scope of instruction covered in 5 months is so large and the problems studied are so complex that the college does not expect to produce graduates skilled in the techniques of all positions on the staff of the commander of a theater of operations or major joint force. The institution emphasizes principles rather than detailed techniques. The aim is to develop selected officers of demonstrated ability and extensive experience by broadening their education and by encouraging them to think in terms of high-level problems, principles, and methods, and in joint terms.

The instruction seeks to furnish a basis for the application of sound reasoning and judgment, in the light of accepted principles, to the solution of problems encountered in operating and administering major joint forces. The college attempts to guide and lead the student in his study, rather than "instruct" him in the narrow sense of the word.

Since not all matters under study have been resolved by the Joint Chiefs of Staff or other authority, controversial topics naturally occur and are taken under study. In dealing with controversial matters the college attempts to maintain an objective point of view. Through the medium of frequent trips to Washington by members of the faculty for continuing consultation with agencies of the Joint Chiefs of Staff and the several depart-

Any large-scale operation in the future will involve a joint effort on the part of several of the armed services—hence, the Armed Forces Staff College was created to train selected officers in joint operations

ments, the latest guidance on such subjects is made available. Instructional mediums are chosen to permit the fullest discussion and formation of independent judgment. Wherever possible, work is performed by committees or staffs whose membership is jointly balanced. In this way, students learn teamwork, learn to subordinate their loyalties to their own services for the good of the armed forces and the Nation, and gain a fuller understanding of the other services' problems.

Student Selection

Based upon the methods used by the separate services in selecting students to come to the Armed Forces Staff College, it is assumed that the students are prepared for the curriculum by completion of schools at the highest level within their own service or by equivalent practical experience in varied command and staff positions, and that they are among the most competent officers of their rank and length of service. It is presumed that students are of high intellectual caliber, possessed of sound judgment, devoted to their profession, and that they will not only profit from being accorded the utmost in academic freedom, but will also have much to contribute to the course they are pursuing. The burden is placed upon the individual to take from the course of instruction according to his own needs, and he is encouraged to contribute in accordance with his training and experience. No grades are assigned as it is considered unnecessary at the college's level. It is believed that competition for marks might jeopardize the desired objectives of full and free discussion, interchange of ideas, interservice co-operation, and mutual helpfulness.

Two Phases of Instruction

The course of 5-months' duration is divided into two phases of instruction: orientation and joint operations.

Orientation Phase

In the orientation phase, the characteristics, capabilities, and limitations of the tools of war employed by the various services, their peculiar techniques, and the relationship that must exist between land, sea, and air components, are studied to the extent necessary to ensure a sound common basic knowledge for joint planning. The course commences with an introduction to joint operations which presents a complete picture of the planning of a major joint operation in all its complexity and magnitude. This is presented to the student at the very start of the course to show the subjects which he will study in detail during the course. This is followed by orientation on the organization, combat characteristics, techniques, logistics, and communications of the Army, Navy, and Air Force.

Senior officers from the highest level of each service visit the college and explain the role of their service, or command, in warfare.

Joint Operations Phase

The joint operations phase of instruction commences with a lecture on the organization of a theater of operations and the responsibilities of a theater commander. A conference on the organization and general functions of a joint staff introduces staff organization and planning. The student explores the virtues and defects of various kinds of staff organization, both operational and administrative, and goes through the processes of the estimate of the situation, the commander's decision, and the preparation of plans and orders.

Amphibious and airborne operations are presented in detail.

The problems and responsibilities of the joint expeditionary force commander and the means by which he exercises command and control are emphasized, and the principles are illustrated by historical examples.

Instructional Methods

Instruction is given by means of four types of instructional methods: lecture, conference, seminar, and group discussion.

Lecture

At the college a lecture is defined as a formal organized speech or reading intended for instruction. No formal question period follows a lecture, but students are free to question the instructor, a member of the faculty, on the subject presented, immediately after the lecture.

Conference

A conference is a meeting in which a lecture or platform presentation is followed by an open discussion or question period. Throughout the first 16 weeks of the course, approximately half of the instruction is accomplished by this method. In general, conference subjects cover joint staff organization, techniques, and procedures; the preparation of plans; characteristics, organization, and employment of Army, Navy, and Air Forces; and organization, composition, and functions of theaters of operations and major joint task forces, and the responsibilities of the commanders thereof. Guests speakers, who are leaders in their fields, address the student body on topics which generally furnish background material and broaden the viewpoint of the student. Although the mission of the college, "To train selected officers of the armed forces of the United States in joint operations," is never lost sight of, it is felt that certain broad background material presented by recognized experts in their fields is necessary for the broader education of an officer destined for the joint staff of a theater commander. One of the most valuable features of the curriculum is that eminent speakers, if they are sure that their words will carry no farther than the audience, often feel free to speak frankly on highly classified and controversial subjects. The college enjoys an excellent reputation for security and thereby safeguards this privilege. The question period of the conference, which follows the formal presentation, contributes a great deal to the instruction of the student body, for the students are experienced officers of outstanding ability and can be depended upon to supply searching and intelligent questions.

Seminar

The seminar is an organized series of meetings of a group for the purpose of studying some subject or for the exchange of information about it. The agenda usually contains a problem or problems to be solved by the group acting as a committee or a joint staff. The seminar group consists of approximately 15 students, representing all services, and a seminar adviser from the faculty. The faculty adviser ensures that the schedule is adhered to and gives advice when appropriate, but instruction in the seminar is largely by student presentation, discussion, and group solutions. Nine seminars are conducted for each class, varying in length from 10 to 25 hours of classroom work each, with some seminars involving considerable work by students outside of scheduled hours. The seminars for the present class, whose titles are descriptive of their content, are: The United States Army; The United States Air Force; The United States Navy; Theater Administrative Organization; Form, Content, and Scope of Joint Operation Plans, Orders, and Annexes; Defense of an Area; Theater Administrative Planning; Trends and Effects of New Developments on Joint Operations; and Practicability of Establishing and Maintaining an Airhead.

For each seminar group a student chief of staff or chairman is appointed who conforms, in general, to the following procedure: receives detailed instruction from the faculty adviser concerning the con-

duct of the seminar; thoroughly familiarizes himself with seminar material and determines what is to be accomplished during the seminar; organizes his group into a staff or committee as appropriate to accomplish the necessary work; controls his group in the preparation of its work by drawing up a work schedule, rendering necessary decisions, and insuring co-ordination between various staff sections when appropriate; and presents the finished work of his group, if required, to the seminar faculty adviser.

Group Discussion

A group discussion is an organized meeting for exchanging information, explaining techniques, or studying a subject. The group discussion differs from the seminar in that it is limited to not more than 4 hours, frequently does not result in a formal solution, and is usually conducted as an informal round-table discussion. The principal object of the group discussion is to share information and points of view. Sometimes an agreement may result, though this may not necessarily be the objective.

During the course, and outside of scheduled hours of instruction, each student is required to prepare a staff study, or a committee study, as assigned by the college. The object of the staff study is to train the student to conduct research upon a new and often unknown subject; to arrive at a logical solution, or conclusion, based upon facts available to him; and to present his study in a concise, clear, and orderly form.

Staff Planning

The final 6 weeks of each course are devoted to a staff planning problem wherein the instruction received during the preceding 16 weeks of the course is put to use in a realistic manner. In committees and joint staff, students work out, in considerable detail, plans on theater of operations and joint force level for a major joint amphibious and airborne assault. Decisions are made and plans are worked out entirely by students, the faculty acting as advisers and umpires. Through rotation of assignments during a number of phases, students are given experience in a variety of responsible command and staff positions. In addition to gaining practice in joint staff procedures, students become familiar with a strategic area of the world.

Time Allocation

Dividing the course of instruction in another fashion, the student has approximately 160 hours devoted to characteristics, organization, and employment of Army, Navy, and Air Force forces, and the relation of these forces to each other; 71 hours to joint staff techniques and procedures; 52 hours to trends of new weapons and scientific developments and their effect upon joint operations; 74 hours to the organization, composition, and functions of theaters of operations and major joint task forces, and the responsibilities (strategical, tactical, and logistical) of the commanders thereof; 71 hours to the preparation of plans for amphibious and airborne operations involving the employment of joint forces; 59 hours to broad background material; and 138 hours to the theater staff planning problem.

Field Trips

In the 160 hours devoted to the several services are included field trips to Army, Navy, and Air Force installations, held at various times throughout the course, which assist in demonstrating the capabilities and limitations of the various services. A trip to Eglin Air Force Base, Florida, allows the students to see the latest aircraft and techniques in use in the Air Force. The Infantry School at Fort Benning, Georgia, provides first-hand information on the infantry and combined arms of the Army, and includes

an airborne demonstration. The Aberdeen Proving Ground in Maryland displays to the students the latest weapons being service tested for the ground forces. Students are taken out in a carrier of Air Force, Atlantic Fleet, to witness a day of carrier flight operations. The Submarine Force, Atlantic Fleet, makes it possible for each student to have a day underway in a submarine, including several dives. A visit to the Amphibious Base, Little Creek, Virginia, allows for an inspection of amphibious vessels and craft, and the opportunity is provided for the witnessing of an assault landing by a regimental combat team. These practical demonstrations point up the orientation instruction given at the college.

In the student body of the latest (eleventh) class there were 189 American officers of the three armed services, with equal representation from each service. The Joint Chiefs of Staff have stated that attendance at the Armed Forces Staff College should take place at some time between an officer's tenth and twentieth years of service, so that the student body is composed of captains, colonels, commanders, and lieutenant colonels.

With the graduation of the recent class of 2 July 1952, 1,840 graduates of the Armed Forces Staff College from all the armed services have returned to their respective services with a better appreciation of their sister services and with a knowledge of joint techniques and procedures that should bear fruit in the development of that most important weapon —teamwork.

One of the most important phases of the students' education at the Armed Forces Staff College is not conducted in the classrooms or from the lecture platform. It is an understanding of sister services which results from working together, playing together, and living together.

Graduate Assignment

Upon graduation, the officers are scattered world-wide—some to joint staffs, a number to their respective departments or the Joint Staff in Washington, the majority to normal service assignments. This majority may not have the immediate opportunity to put into practice the joint education they had just had, but they do bring to their respective services a broader joint outlook, and they act as counterweights in balancing the scales between unilateral and joint action. The experience gained in World War II is being dissipated, especially in the attrition rate of leaders who were senior enough to exercise joint command. The function of the Armed Forces Staff College is to compensate for this loss of experience through theoretical and practical training in joint techniques and procedures. Before many years the graduates of the Armed Forces Staff College will be occupying the responsible positions in both staff and command for which they have been trained; and when this time occurs, unification—real teamwork—will become a fact in being as well as in law.

Today world events are moving toward a climax that may bring new hopes for peace—or a world-wide war. With the possible exception of a few men in the Kremlin, no man knows which it is to be. In this country we all want peace and we will continue to hope for peace as long as hope can be justified. But the rulers of the Soviet Union preach peace, while they instigate war.

General Nathan F. Twining

Let's Condense for Better Defense

Lieutenant Colonel John A. Mathews, *United States Air Force*
Headquarters, Japan Air Defense Force

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

AFTER World War II—and as the result of a long and thorough consideration—we "unified" the War and Navy Departments by enacting the National Security Act of 1947.

This action stemmed from a recognition that we cannot afford to have several military agencies competing for our national resources. As stated in the *Naval Logistics Manual*, the "need for economy and efficiency in the wartime logistical application of our resources was probably the most compelling factor leading toward unification." However, by the time the action was taken, the demand and thus the competition for resources had subsided. Therefore, following the democratic tradition, we adopted a compromise—the National Security Act of 1947. Now that we have had time to evaluate the efficacy of that Act, what do we find?

Critical analysis of the Act reveals that its "Declaration of Policy" includes several features which may be self-defeating. For example, the Act states that "it is the intent of Congress to provide for the establishment of *integrated* policies and procedures . . . relating to the national security." But in the same sentence, it provides "*three* military . . . (forces) for the operation and administration of the Army, the Navy . . . and the Air Force, *with their . . . service components*" (italics are the author's).

The integration of organization which is essential to the integration of policy and procedure was thus effectively precluded. With *separate* "service components," it is at best cumbersome, and, at worst, impossible to integrate policy and procedure for design, development, acquisitions, and storage of matériel and for distribution of matériel to combat organizations. Such "integration" as is now accomplished by the Joint Chiefs of Staff, the Research and Development Board, and the Munitions Board is not an adequate substitute. Some merging of logistics organization is necessary—and was recognized as necessary by many who initiated the movement for unification. However, the Act specifically prohibits any merging of the forces. Its stated intent is "to provide for their authoritative co-ordination and unified direction under civilian control *but not to merge them.*" Also, in the democratic tradition, we reviewed the Act in 1949, and enacted certain amendments.

These are known as the "National Security Act Amendments of 1949." Moreover, although these Amendments increased the scope of authority of the Secretary of Defense and the Research and Development and Munitions Boards, they also further fortified the Act's self-defeating aspects by requiring the three military (forces) to be "*separately administered*" and by prohibiting the establishment of a "*single chief of staff*" and an "*armed forces general staff.*"

Thus the far-seeing attempt to unify our three separate military forces into one integrated organization was partly thwarted by prohibiting its three most essential features. These are:

1. A single armed forces general staff headed by a single chief to simplify and assure co-ordination among the forces.

2. A single system for administration of all armed forces personnel to raise interest to the whole above interest to the parts.

3. A logistics force to relieve the combat forces of the drudgery which is inherent in logistics.

One General Staff

Let us consider the single general staff for a moment. The Army has a general staff, the Navy and the Air Force have organizations which function as general staffs. The usefulness of the general staff principle in military organization is recognized even at lower levels of organization—the theater of operations, the numbered army, the fleet, and the numbered air force; the division, the task force, and even the base. If use of the general staff type of organization is desirable at all these levels, surely it is desirable—even essential—at the top level. This situation is anomalous in view of the lesson we so laboriously learned at the beginning of the century. Elihu Root as Secretary of War became famous for showing the way to effective control of the Army by the establishment of a general staff headed by a single chief of staff.

In overcoming the opposition of the bureau chiefs and the commanding general of the Army, Secretary Root said in his Annual Report:

> Our military system is, however, still exceedingly defective at the top. We have a personnel unsurpassed anywhere. . . . We have the different branches of the military service well organized, each within itself, for the performance of its duties. Our administrative staff and supply departments, as a rule, have at their heads good and competent men . . . each attending assiduously to the business of his department. . . .
>
> But when we come to the co-ordination and direction of all these . . . agencies of warfare, so that all parts of the machine shall work true together, we are weak. Our system makes no adequate provision for the directing brain which every army must have to work successfully. Common experience has shown that this . . . requires a body of officers working together under the direction of a chief and *entirely . . . independent of the administrative staff of an army (such as the adjutants, quartermasters, commissaries, etc., each of whom is engrossed in the duties of his own special department)* (italics are the author's). This body of officers, in distinction from the administrative staff, has come to be called a general staff.

According to Hittle in *The Military Staff*:

> The undeniable wisdom of Elihu Root's reasoning convinced the Congress and the act which was introduced in 1902 became law on February 14, 1903. The legislation abolished the office of commanding general of the Army, replacing it with the office of chief of staff, who acting under the direction of the President and the Secretary of War was to have supervision not only over the troops of the line, but also over the staff departments which had, in the past, been directly responsible to the Secretary of War. It created for the assistance of the new chief of staff a corps of 44 officers, *who were relieved of all other duties* (italics are the author's). At long last the United States had a general staff.

Since the War and Navy Departments were not at that time so interdependent as they are now—especially as regards the development of material resources for war—it is understandable that no attempt was then made to establish a Department of Defense. However, now that we recognize this interdependence, have established a Department of Defense, and have even added a new interdependent force—the Air Force—does it not behoove us to es-

The appointment of a Supreme Chief of Staff and the organization of single administrative and single logistical forces to direct, service, and supply all of the armed services are three essentials of true unification

tablish a single chief of staff and a supporting general staff without other duties?

German General Staff System

Is it not significant that the armed forces of Germany, which came so near to defeating a group of nations possessing superior resources, were led by a "supreme general staff over all the armed forces"? Many of our leaders, of course, recognize the supremacy of the German general staff system; however, because it was an instrument for evil they are afraid of it. They do not seem to realize that any instrument can be evil in the hands of evil men. Have we hesitated to adopt their devilish guided missiles?

The Soviet General Staff

Is it not also significant that our present center of concern, the Soviet Union, has established an "Armed Forces General Staff" headed by a "Chief" who answers directly to the Minister of the Armed Forces. Under the 1946 reorganization, a *stavka*, or Headquarters of the Supreme Commander, was created. It consisted of between 30 and 40 key officers from both the Army (this included aviation elements) and the Navy who performed *stavka* duties in addition to their regular assignments. Functioning as an advisory staff to the Supreme Commander, it was charged with the mission of developing broad strategic plans. To accomplish this planning function a small secretariat was attached to the *stavka*.

A Concept

Now there are some who believe that our Joint Chiefs of Staff organization, supported by the Joint Staff and the Research and Development and Munitions Boards, is superior to a supreme general staff. For example, Hittle in *The Military Staff* asserts:

> While accepted on the Continent, the single general staff concept has never found legal acceptance in this country or in England. The United States depends in any major war upon the proper and full utilization of the capabilities of our Nation's land, air, and sea power. The misuse of either in a major war might well be fatal to our security.
>
> Because of the fundamental deficiencies of the single general staff concept, when considered in terms of United States security requirements, this country has evolved the quite different and highly appropriate Joint Chiefs of Staff system as the over-all directing military agency of the armed . . . (forces). Composed of the uniformed Chiefs of the Army, Navy, and Air Force, each with equal status meeting with a Chairman of the Joint Chiefs of Staff, and assisted by a Joint Staff selected from the three . . . (forces), the Joint Chiefs of Staff system assures that full consideration is given to the capabilities of land, sea, and air power.
>
> Decisions that derive from a deliberative rather than an arbitrary process allow no element of the armed forces to possess the power on the highest strategic level to minimize or misuse the other major . . . (forces). Fully responsive to the demands of the swiftly changing situations of global combat in World War II, the Joint Chiefs of Staff concept proved its superiority over the single general staff system of our enemies.

An Evaluation

This is a debatable conclusion which leads logically to a further conclusion that staffs below the top level, such as the Army General Staff, must also be "joint" lest the Infantry seize the power to minimize the other branches such as Artillery and Armor. Imagine the efficacy of an army general staff comprising the chiefs of all army branches. Imagine decisions being made on the unanimity rule basis—and implementation of decisions being somewhat optional with the semi-autonomous members of this staff.

If any element of the armed forces possesses the power to minimize or misuse the other elements through its influence on a single general staff, this can only be the direct result of divided interest. Analysis of this phenomenon is made in a subsequent portion of this article.

The Hoover Commission, reporting to Congress in February 1949, said:

> Interservice rivalries indicate a lack of understanding of the fact that military security depends upon co-operation and balance among the Army,

Navy, and Air Force, and upon the creation of a genuinely unified military arm. There is a lack of close working relationships among such important elements as the Research and Development Board and the Joint Chiefs of Staff . . . Some part of these weaknesses undoubtedly can be traced to the newness of the operation, but the Commission believes that they show serious organizational defects. The lack of central authority . . . the rigid statutory structure . . . and divided responsibility have resulted in a failure to assert clear civilian control over the armed forces.

Even so, the Commission limited its recommendations to the strengthening of the authority of the Secretary of Defense in various ways including the appointment of a "chairman to preside over the Joint Chiefs of Staff and to represent, and report to, the Secretary of Defense."

A Logical Solution

However, 4 of the Commission's 11 members, namely Messers Dean Acheson, George H. Mead, James K. Pollock, and James H. Rowe, Jr., submitted a separate statement on the Joint Chiefs of Staff. They said:

We cannot agree with the recommendation of the other members as to the Joint Chiefs of Staff. We feel this Commission should go one step further and recommend to the Congress the creation of a single Chief of Staff over the Joint Chiefs of Staff.

The full Commission is, we think, in complete agreement as to the problem inherent in the present system of the Joint Chiefs. Our differences lie in the way it should be solved.

Stated simply, there are several major flaws today which are for the most part caused by deficiencies in organization. The existing structure operates to prevent our disinterested and able—indeed often brilliant—high-ranking military men from performing the best service of which they are capable. . . .

. . . They appear to be too deeply immersed in the point of view of their particular services. Since they occupy dual roles—they are heads of separate . . . (forces) as well as members of the Joint Chiefs—they must, perforce, be advocates. The task force report has said: ". . . the individual Chiefs of Staff . . . have been too heavily burdened with departmental (force) obligations to give their important duties as members of the Joint Chiefs of Staff the time and thought that those duties demand. . . ."

If the President and the Secretary of Defense are to decide intelligently, the civilian head must have staff advice responsive to him and not to one of the three services. If the Congress is to legislate wisely, to appropriate judiciously, it must be advised from an over-all strategic point of view, not on the basis of a compromise of desires of three separate services.

A single Chief of Staff, with adequate staff, will, we believe, escape from the particularistic view of one service; a tradition aimed toward the over-all defense needs of the Nation will begin, and today's habit of advocacy will diminish and gradually disappear. . . .

We believe that a single Chief of Staff will strengthen, not weaken, the tradition of civilian control of the military. . . . Accordingly we recommend the post of Chief of Staff for the Armed Services. . . .

In addition to the foregoing dissent, 3 of the 14 members of the Committee or Task Force on the National Security Organization, namely the late Judge Robert P. Patterson, former Secretary of War, Mr. John J. McCloy, and Mr. Chester I. Barnard, similarly submitted separate statements recommending the appointment of a single chief of staff.

Mr. Barnard said "I believe a single chief of staff, in the long run and specially under emergency or war conditions, would be safer, more efficient, and more effective . . . . "

Mr. McCloy said:

. . . Damaging rivalries and even controversies within the military establishments (still persist) . . . . The country cannot afford to endure the wasteful character of these divergencies either in war or peace. It is my view that we shall not be able to avoid these controversies or achieve the best preparation for war if some drastic steps are not taken to elevate the thinking of the officers of our armed services to a plane beyond that of the interests of their respective services.

Though the last war was handsomely won, victory was accomplished as much by the plentitude of our resources and energies as by good management. Those who know something of the innerconduct of the war are aware of the frustrations and compromises which marked some of its planning. Though the level of planning and decision was high it could have been better and in the next war it may well have to be better. The next war, if there be one, is so certain to demand all our capacities that we shall not be able to afford less than the best management as well as the best economy of our resources.

It is for these fundamental reasons that I urge the establishment, on the highest level, of a man in uniform whose sole duty it is to consider the problems and potentialities of the fullest and best utilization of all our armed forces without relation to the interest or alleged interest of the various services. . . .

Even with the urgency of war and the presence of a great and objective personality as one of the chiefs, the frustrations of . . . (the joint staff) system were evident on a number of occasions in the last war. . . .

Mr. Patterson, who served as Undersecretary of War under Henry L. Stimson during the war, and later succeeded Mr. Stimson, said:

I regret that I cannot concur in the draft of (the) report . . . it is my conviction that the military establishment will not be on a sound organizational basis, with waste reduced to a minimum, until we have a single Department of Defense in place of the three . . . (forces) of Army, Navy, and Air. This does not mean a . . . merger of the three . . . (forces). They would carry on as the three branches (forces) of the military establishment, but they would carry on as components of a single Department, under management of the Secretary of Defense. . . .

. . . (The National Defense Act) of 1947 was a step forward, (but) actual experience under it has proved that too much recognition was given to divisive influences and not enough to unifying elements. We might as well face up to the fact that interservice frictions have not been reduced, and that costly duplications have not been diminished. I do not believe that we must wait for the slow processes of time and education to cure these evils, nor do I believe that they will be brought under control by writing into the law a mandate that everyone must from now on be cost-conscious. On the other hand, I am confident that a sound organizational structure, with plenty of authority lodged at the top of it and with means provided for exercise of that authority, would put an end to most of these troubles.

The objectives that have been raised in the past to a single Department of Defense are that the morale of one or more services would be hurt, and that civilian control over the military might be placed in jeopardy. There are traces of those ideas in the Committee report. I am as sensitive as anyone to considerations of morale and of civilian control, but no one has ever explained why or how a single Department would cause a decline in morale or a weakening in civilian control. I regard these as "stock" objections, almost invariably put forward when progress in organization of the military establishment is proposed.

One Personnel System

Although the mere establishing of a single general staff would go a long way toward solving many of our problems, its effectiveness could be substantially increased by the adoption of a single system of military personnel administration—the second essential feature of an integrated Department of Defense. We must unify the loyalty of defense personnel. We now encourage a division of loyalty by having four separate systems for administering them—one each for the Army, the Navy, the Air Force, and the Marine Corps. Within each of these systems—but not between them to a significant degree—personnel are recruited, trained, paid, promoted, assigned, transferred, and serviced with food, clothing, shelter, medical care, recreation, and general welfare services.

The loyalty of a person to those with whom he is in such systematic association is understandable and natural. Identifying his career with the career of his force, each member strives to increase the relative importance of that force—if necessary at the expense of the other forces. Any change in the relative importance of forces—which is inevitable as time goes on—is fiercely resisted by each member of each force.

In this connection, the Hoover Commission recommended that military education, training, recruitment, promotion, and transfers among the services be put under the central direction and control of the Secretary of Defense, and that full authority be vested in the Secretary of Defense, subject only to policies established by the Congress and the President, to prescribe uniform personnel policies for civilian and military personnel throughout the several services (forces).

Multiplicity of personnel systems brings emotion into play where reason is required. This is what magnified the problem of determining the relative im-

portance of certain principal weapons—the super bomber and the super aircraft carrier. Moreover, this now impedes the determination of the importance of amphibious, airborne, and tactical air forces and their proper position in the armed forces organization. A single system of personnel administration would minimize emotionalism and encourage greater objectivity even in the Joint Chiefs of Staff and the present boards of the Department of Defense.

The truth of this is demonstrated in the paucity of emotionalism attending the decision to abolish the Cavalry. Because Cavalrymen belonged to the same personnel system as Infantrymen, Artillerymen, Ordnance, and other Army branches, it was relatively easy for them to accept the abolishment of the Cavalry. They knew their careers would not suffer irreparable damage. Official Cavalry "pressure" was not brought to bear on the former Cavalrymen of the General Staff nor on Congress. However, suppose the Cavalry had had an autonomous personnel system. Would not the men of the Cavalry have become emotional in resisting the abolishment of their "fraternity"—with no place to go without beginning anew? Would they not have striven to maintain the "equality" of the Cavalry?

That such changes must occur is demonstrated by history. The Medical Corps spawned the Signal Corps, which in turn spawned the Air Corps. The Air Corps outgrew both parent and grandparent, and became the Air Force. Who is ready to say that a guided missile force may not grow out of the Air Force, and eventually eclipse it in size?

Human emotion is a strong force. Let us unify and organize it in the armed forces. No one questions the logic of Infantry and Artillery personnel being administered in a single personnel system—the United States Army. Likewise, the surface sailor, submariner, and naval aeronaut are within a single personnel system—the United States Navy. And the jet fighter pilot, the bomber crewman, and the weather observer are within a single personnel system—the United States Air Force. Can we not make the leap to conceive the logic of all these being in a single personnel system—the United States Armed Forces? In such a large system we would, of course, need branches, but not necessarily the present ones since some consolidation or regrouping would be more logical. Meteorologists would perhaps form a branch, communicators another, and constructors another.

A Separate Logistics Force

The third feature of organization which is essential to proper integration is a separate logistics force. Although not less important than the single general staff, and the single system of personnel administration, a separate logistics force would be more efficacious if established in conjunction with such a staff and such a personnel system. Without a general staff to co-ordinate the four principal forces—ground, sea, air, and logistics—the advantages of consolidated control of logistics might be offset by a lack of close co-ordination of logistics with the combat forces.

Logistics Defined

Logistics is defined by the Joint Chiefs of Staff as "that part of the entire military activity which deals with: (1) design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of matériel; (2) induction, classification, training, assignment, welfare, movement, evacuation, and separation of personnel; (3) acquisition or construction, maintenance, operation, and disposition of facilities; and (4) acquisition or furnishing of services. It comprises both planning—

including determination of requirements —and implementation."

Obviously, under such a comprehensive definition of logistics, responsibility for each of its elements cannot be entirely separated from the responsibility for combat operations. Nor is any advantage envisionable from such a separation. Some movement and maintenance of weapons must be accomplished by the users of the weapons. Some training, assignment, welfare, and movement of personnel is inherent in combat operations. Some acquisition or construction, maintenance, and operation of facilities by combat forces is essential. Moreover, combat forces must furnish some of their own required services.

Mission—Combat or Logistics?

However, it is not less obvious that combat forces need not be burdened with all the elements of logistics—the less they are so burdened, the better they can concentrate on the difficult problems of combat. Restated, the more we separate logistical responsibilities from combat responsibilities, the more we can free combat troops for concentration upon their mission. The more we can consolidate control of logistics in one organization, the more efficient logistics can be.

Force-wise, we recognize the logic of maximum separation of logistics from operations. In the Army, all logistics except those which are inextricable from combat operations are the responsibility of the Technical Services and the Army Field Forces.

The combat armies are not burdened with responsibility for research and development, acquisition, storage, evacuation, and disposal of matériel; nor for movement of matériel from the source to combat areas, its distribution among the various armies, and its maintenance except that which can be readily accomplished in the combat area. They are, likewise, not responsible for acquisition or construction, maintenance, operation, and disposition of facilities except those required directly for combat operations; nor for acquisition or furnishing of services except those required inside the combat area. The Technical Services and Theater Service Forces have these responsibilities.

Neither are the combat armies burdened with induction, classification, and basic training of personnel. The Army Field Forces has these responsibilities.

In the Navy and in the Air Force, there is a similar separation of logistical responsibilities. Moreover, in each of the three military forces, co-ordination between combat and logistics activities is effected through a general staff.

Even in theaters of operation, where logistical responsibilities are reduced by exclusion of research and development and major procurement, each of the three military forces effects maximum separation of logistics functions from combat or operations functions. Thus in the Far East Command, we have the United States Army Forces, Far East, the Far East Air Logistics Force, and the Seventh Fleet Logistic Support Force.

But even force-wise, we do not so clearly recognize the logic of maximum consolidation of logistics functions and control. The pressure of wartime competition for resources helps us to recognize this. Moreover, when the war is over, we usually revert to the prior fragmentary-type of organization. As the *Naval Logistics Manual* puts it, "The present logistics organization is the result of an evolutionary process. Each succeeding war brings increased knowledge of the science of logistics, and the following peaceful years thrust the know-how into the background."

Thus, in World War I, we consolidated Army logistical responsibilities in the Services of Supply—only to revert to the

prewar organization following the war. Moreover, in World War II, we again consolidated Army logistical responsibilities in the Army Service Forces—again to revert to the loosely co-ordinated Technical Services as soon as the competition for resources ceased. Must we wait for another world-wide war to once more recognize the logic of consolidation?

Competition for Resources

What do we mean by fragmentary-type logistics organization? Under our present military establishment many semi-autonomous organizations compete for our national resources. Eight of these—the Adjutant General's Corps, the Ordnance Corps, the Corps of Engineers, the Quartermaster Corps, the Signal Corps, the Transportation Corps, the Medical Corps, and the Chemical Corps—are under the command of the Army Chief of Staff. Seven—the Bureau of Personnel, the Bureau of Ships, the Bureau of Aeronautics, the Bureau of Ordnance, the Bureau of Yards and Docks, the Bureau of Medicine and Surgery, and the Bureau of Supplies and Accounts—are under the command of the Chief of Naval Operations (but also subject to guidance in management from the Assistant Secretaries of the Navy). Two—the Air Matériel Command and the Research and Development Command—are under the command of the Air Force Chief of Staff. However, this is as far as clear-cut command co-ordination goes. Among the three military forces—Army, Navy, and Air Force—further co-ordination is the responsibility of the Joint Chiefs of Staff, the Research and Development Board, and the Munitions Board. This co-ordination is not adequate for two reasons. First, the amount of activity requiring co-ordination is too great to be dealt with by three agencies which are themselves only loosely co-ordinated by the Secretary of Defense. There are millions of articles requiring co-ordination of design, requirements, procurement, distribution, and maintenance. There are innumerable services requiring co-ordination of kind, scope, and degree. Second, the co-ordinating capability of these agencies is vulnerable to the prejudice which results from a lack of unified loyalty—they are comprised of personnel of all three military forces (Army, Navy, and Air Force).

Thus, a prominent weekly reported in August 1949:

> As the Government's top scientific group . . . (the Research and Development Board) was charged with the thorny task of researching for the three armed services. One exasperated scientist explained: "It works like this—the service that screams the loudest gets the mostest." Board members themselves dubbed the RDB "The Little Town of Bedlam." This week, exactly 2 years and 23 board meetings later, the RDB took stock. . . . Its silver-haired 61-year-old chairman, Dr. Karl T. Compton, topped a sprawling complex which included a 6-man board, a 250-man secretariat, 15 committees with specialties ranging from guided missiles, atomic energy, electronics, and aeronautics to navigation, ordnance, and human resources; and about 2,000 part-time military and civilian scientists. Compton's king-sized mission: to allocate half a billion dollars a year for military research, fill gaps in military research, and reduce duplication. . . .
>
> As for the workings of the Board itself, "Dr. C." (as the board members call him) could boast of two important advances: (1) Certain fields of research have been assigned exclusively to one of the three services. For example, despite vehement protests by the Navy and the Air Force, the Board recently gave the Army the job of handling all biological warfare. (2) For the first time in the Nation's history the Board this month completed a single research budget for all three services. . . . Despite these decisions, RDB men knew that the Board suffered all too often from unification wrangles that still harassed the whole national military establishment. . . .
>
> Dr. Compton can do little about this kind of controversy, since the Board takes its orders from the Joint Chiefs of Staff on what strategic goals to pursue. . . . Dr. Compton takes a philosophical view of his tough job, saying: "A very substantial amount of co-ordination of the . . . (forces) and improvement of the programs is accomplished not at top levels but by the getting together of the working technicians."

Proper organization is, of course, the

key to such "gettting together" of the working technicians. As now organized, the working technicians are separated by artificial barriers of provincialism nurtured by the artificial separation of all activity as Army, Navy, or Air Force.

The Hoover Commission recommended that full authority for the procurement and management of supplies and matériel be vested in the Secretary of Defense. He can delegate this authority to the Munitions Board, or to other agencies as he may determine, with directions to expedite the elimination of costly duplication in procurement and waste in utilization among the three services.

Logistics Force Recommended

No one contests the logic of maximum separation of responsibility for combat doctrine, organization, and operation from that for logistics at the force level. Why, then, do we not recognize the logic of applying such a simple principle to the Department of Defense as a whole? Why not assign the responsibility for all Department of Defense logistics to a single force—a Logistics Force? Would this not provide us with a "tool" for the solution of our greatest of all logistical headaches —the competition of our proud and eager armed forces for manpower, facilities, equipment, and supplies?

Under a Logistics Force, all military research and development could be made the mission of a single command. Duplication and overlapping could be minimized. Research and development are not logically divisible into Army, Navy, and Air Force groupings as we now have them divided. That we recognize this is obvious upon examining the organization structure of the Research and Development Board. It has committees on guided missiles, atomic energy, electronics, aeronautics, navigation, ordnance, and others. Hardly any of these categories are of peculiar interest to any one force.

All three forces are inextricably interested in electronics, guided missiles, and atomic energy, and two are similarly interested in aeronautics and ordnance. There is simply a complete lack of logic in conducting research and development through the three existing channels. The principle of management which asserts that homogeneous functions should be grouped for control demands that research and development be reorganized throughout the military establishment—perhaps employing the pattern of the Research and Development Board.

Under a separate Logistics Force, all determination of requirements, procurement, and distribution could be made the mission of a single command. Would this, likewise, minimize duplication and overlapping?

To begin with, the present prickly problem of procurement assignment would be *cut down to size*. Ever since procurement assignment was conceived as a solution to the evil of competition for resources among the forces, it has been a thorny problem. The Munitions Board has been attempting for more than 5 years to assign procurement responsibilties so as to eliminate such competition. Procurement as here used includes: (1) purchasing, (2) contract administration, (3) inspection, (4) transportation to depot, (5) specifications, and (6) standardization.

The complexity of this problem as approached by the present method is attested by the Munitions Board list of procurement assignments. Construction equipment, ordnance, watches and clocks, amphibious motor vehicles, laundry equipment, and lighting fixtures are assigned in part to *both* the Army and the Navy.

Tires and tubes, and firefighting vehicles, are assigned in part to *both* the Army and the Air Force. Aircraft are assigned in part to *both* the Navy and the Air Force. Electronics equipment—not assigned for procurement—is presumably procurable by *all of the three* forces.

A single Procurement and Distribution Command could be organized into branches having cognizance over logical groupings of matériel. The pattern of organization could readily be conformed to the natural pattern of industry—aircraft, automotive, shipbuilding, transportation, textile, rubber, chemical, food, and others.

We made a good beginning in applying the principle of homogeneous assignment of procurement more than 5 years ago, but we lost the momentum somehow. We established the Armed Services Medical Procurement Agency for the procurement of all medical equipment and supplies; and the Armed Services Petroleum Purchasing Agency for the procurement of all petroleum products. In Department of Defense publications—and even in some of the Army, Navy, and Air Force—we proudly and justly cite these examples of unification. However, until the principle is extended to the procurement of all matériel, we can expect only token benefits such as the avoidance of procurement of specific items by several agencies.

The real benefits of unified procurement are centralized control and unified field supervision of all purchasing, contract administration, inspection, transportation, specifications, and standardization. We cannot obtain these benefits until all procurement is made the responsibility of a single agency.

Each of the procurement organizations previously mentioned is responsible—with respect to groupings of matériel assigned to it by the Munitions Board—for each of the procurement functions mentioned above. Most of them not only are semi-autonomous at the top, but also have their own field offices and procurement regions throughout the United States. A year or so ago, some plans were made for merging all field procurement agencies into a single group under direct control of the Munitions Board. Provincialism in the Technical Services and bureaus—encouraged by the prohibition against merging contained in the National Security Act—prevailed to prevent this forward step.

Nevertheless, the inefficiency of having numerous separate field offices in the same city, under different agencies performing substantially identical functions, was so obvious that a compromise was effected. Many of these offices are now side by side in the same building and administered jointly or by one agency for all the others. However, while this arrangement is a forward step, it is obviously less efficient than a single group of procurement regions each supervised by a field office directly under the command of a single procurement command. Intelligent and objective allocation of scarce facilities, tools, materials, and manpower requires complete elimination of the present inherently competitive arrangement.

The need for better organization is perhaps reflected in "The Machine-Tool Fumble" as recently reported in FORTUNE (January 1952):

> The most urgent tooling problems now—always excepting the design crisis—is getting the armed services to use their growing tool deliveries efficiently. For, as one company head remarked, "The country's full of half-tooled plants" . . . .
>
> Another need—still—is co-ordination among the various armed services. To take Bullard (a machine tool company) . . . 22 percent of its critical output is allocated for Air Force programs, 26 percent for Army, and 24 for Navy, including Navy air. Since the switch from piston engines to jets has brought tremendous tool needs, an Air Force claimant ordering tools from Bullard today will get a delivery date in early 1954; an Army claimant need wait only till next fall; and the lucky Navy contractor gets his in 4 months. The crying need is for an interservice priority list.

The Munitions Board

Of course, the Munitions Board is responsible for co-ordinating all procurement activities, but its policies are inherently somewhat prejudiced, and its influence is indirect.

Staffed with members of each of the

separate military forces, complete objectivity hardly can be expected. Moreover, the only forceful action it can take is against an entire force, yet such action must be taken through the Joint Chiefs of Staff—one of the three members of which is the chief of the force against which action is required. Could any arrangement be less likely to obtain objectivity?

Since distribution (and maintenance which is an element of it) is closely allied to procurement, the same command could be made responsible for both. As previously explained, the ultimate distribution to combat troops generally must be made by the combat commands to which the troops are assigned.

However, the initial stages of distribution from manufacturing plant to "wholesale" depot to "retail" depot, and then to theaters of operations and fleet shore establishments, can certainly be accomplished by a single command of the Logistics Force.

Here again, the real benefits are centralized control of stock transfer, minimization of total stock in "pipe line," standardization of maintenance policy, and conservation of depot facilities, transportation, and manpower.

Taking ordnance as an example, the same central agency which controls procurement of ordnance would control its distribution, just as the Ordnance Corps now controls both procurement and distribution of Army ordnance from Washington. However, the "Ordnance Branch of the Procurement and Distribution Command," as it might be appropriately called, would so control *all* ordnance—that is to say, Army, Navy, and Air Force ordnance.

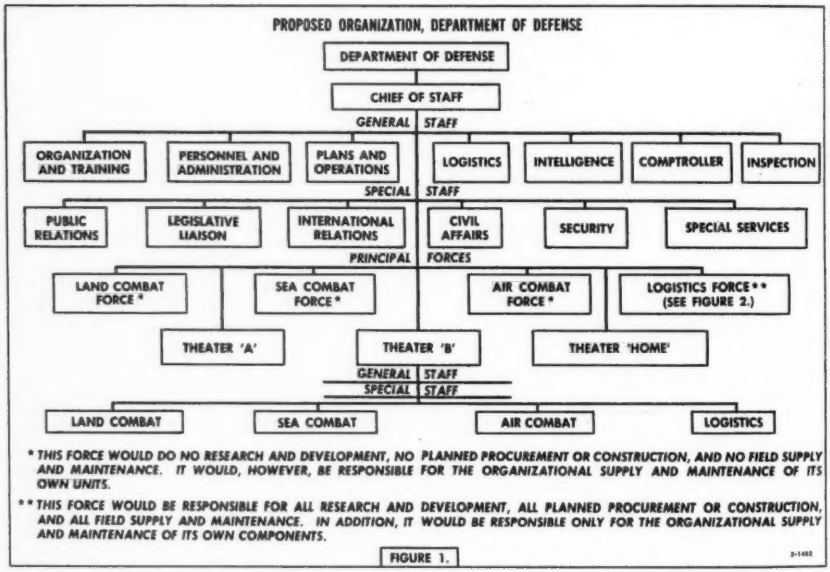

PROPOSED ORGANIZATION, DEPARTMENT OF DEFENSE
DEPARTMENT OF DEFENSE
CHIEF OF STAFF
GENERAL STAFF
ORGANIZATION AND TRAINING
PERSONNEL AND ADMINISTRATION
PLANS AND OPERATIONS
LOGISTICS
INTELLIGENCE
COMPTROLLER
INSPECTION
SPECIAL STAFF
PUBLIC RELATIONS
LEGISLATIVE LIAISON
INTERNATIONAL RELATIONS
CIVIL AFFAIRS
SECURITY
SPECIAL SERVICES
PRINCIPAL FORCES
LAND COMBAT FORCE *
SEA COMBAT FORCE *
AIR COMBAT FORCE *
LOGISTICS FORCE ** (SEE FIGURE 2.)
THEATER 'A'
THEATER 'B'
THEATER 'HOME'
GENERAL STAFF
SPECIAL STAFF
LAND COMBAT
SEA COMBAT
AIR COMBAT
LOGISTICS
* THIS FORCE WOULD DO NO RESEARCH AND DEVELOPMENT, NO PLANNED PROCUREMENT OR CONSTRUCTION, AND NO FIELD SUPPLY AND MAINTENANCE. IT WOULD, HOWEVER, BE RESPONSIBLE FOR THE ORGANIZATIONAL SUPPLY AND MAINTENANCE OF ITS OWN UNITS.
** THIS FORCE WOULD BE RESPONSIBLE FOR ALL RESEARCH AND DEVELOPMENT, ALL PLANNED PROCUREMENT OR CONSTRUCTION, AND ALL FIELD SUPPLY AND MAINTENANCE. IN ADDITION, IT WOULD BE RESPONSIBLE ONLY FOR THE ORGANIZATIONAL SUPPLY AND MAINTENANCE OF ITS OWN COMPONENTS.

FIGURE 1.

Ordnance Organization

Under present organization, the Ordnance Corps operates dozens of depots throughout the United States to supply ordnance equipment, repair parts, special tools, and supplies to Army units; and to

make such repairs to ordnance equipment as cannot be made by the using units. In order to accomplish this major mission effectively, each such depot must keep in stock continuously a carefully determined quantity of a carefully determined list of items. An unstocked item or too little of any particular stocked item may delay the repair of a major weapon—perhaps a critically needed tank. An unneeded item or too much of a needed item would be wasteful of our resources and thus require more procurement and the resultant use of critical material.

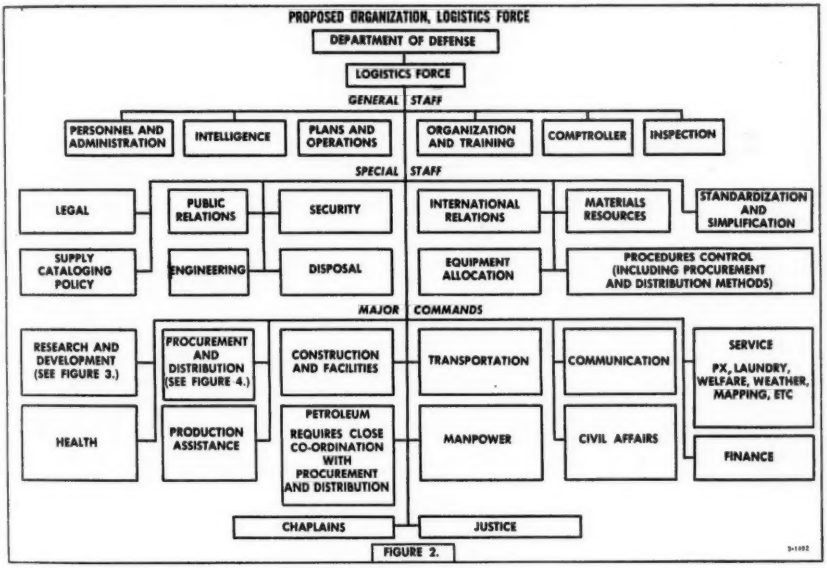


FIGURE 2.

To solve this apparent dilemma, there is a central stock-control office for each item, to which each depot must periodically report its "stock balance and consumption." The stock-control office has the authority or the duty to direct transfers of stock from one depot to another to obtain the most effective utilization of stock based upon its knowledge of changing requirements and changing resources. No fiscal transactions are involved as the matériel is simply shipped and appropriate changes are made in the records and reports of the affected depots. Priorities and emergencies of need—now here, now there—can be readily met with this wonderfully flexible system. Machine records and teletype data transmission have been developed to further improve the sensitivity of control.

Also under present organization, the Bureau of Ordnance operates numerous similar depots throughout the United States to supply ordnance equipment, repair parts, and supplies to Navy units; and to make such repairs as cannot be made by the using units. Likewise, the system of Air Force depots handles certain items of ordnance employed by the Air Force.

Stock Control

Under a single command, the principles of stock control, now employed independently within the Technical Services and

bureaus, could be applied collectively to all ordnance possessed by the Department of Defense. The relatively inflexible allocation of ordnance among the military forces as now practiced could be replaced with the more flexible stock transfers based upon Department-wide priority.

tioned. Can there be any doubt about the conservation of facilities which this would permit?

A Transportation Command

Similarly, a single system of depots would naturally require less transporta-

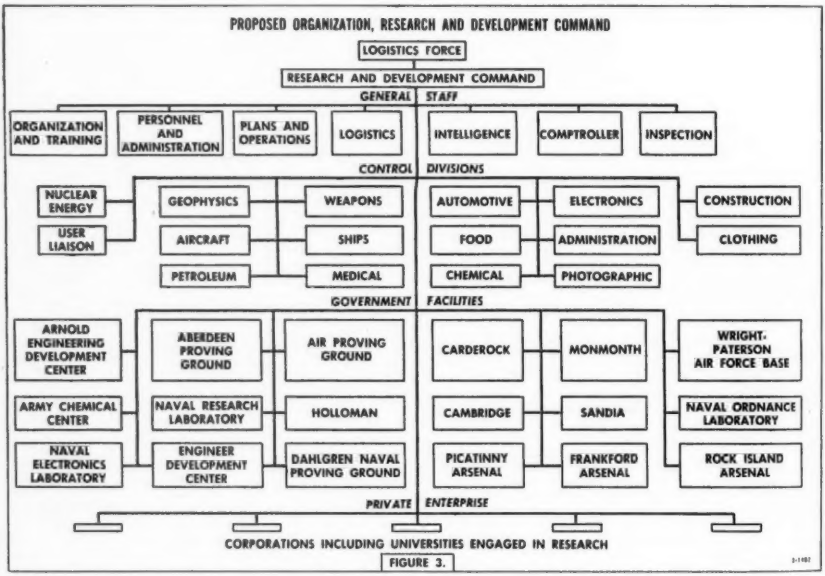


FIGURE 3.

Stocking policy throughout the distribution system could be more in conformance with need. The single objective of balanced distribution for the armed forces as a whole would replace the three current and competitive objectives of balanced distribution for each of the three military forces independently. Fiscal transfers among the forces to compensate for matériel transfers, now prevalent, could be eliminated.

A single system of depots managed by a single agency—the Procurement and Distribution Command—could replace the numerous relatively independent systems now managed by the various procurement and distribution agencies previously mentioned and facilitate control of transportation. This leads to the thought that a separate Logistics Force would permit the consolidation of all transportation under a "Transportation Command." Consider the savings in manpower alone if the traffic control organizations of the three military forces were to be merged. Moreover, is it not probable that lower rates could be obtained as a result of the simplification of traffic pattern and concentration of supplies for shipment which would naturally occur within the jurisdiction of a single traffic control agency?

In transportation management, the Hoover Commission recommended that the Bureau of Federal Supply:

a. Advise all Government agencies on traffic management problems.

b. Represent all agencies in negotiating rates with the carriers.

c. Represent all agencies in cases before the transportation regulatory bodies.

d. Advise agencies as to reasonableness of carriers' bills.

e. Prepare and maintain appropriate manuals and guides relating to traffic management activities of Government agencies.

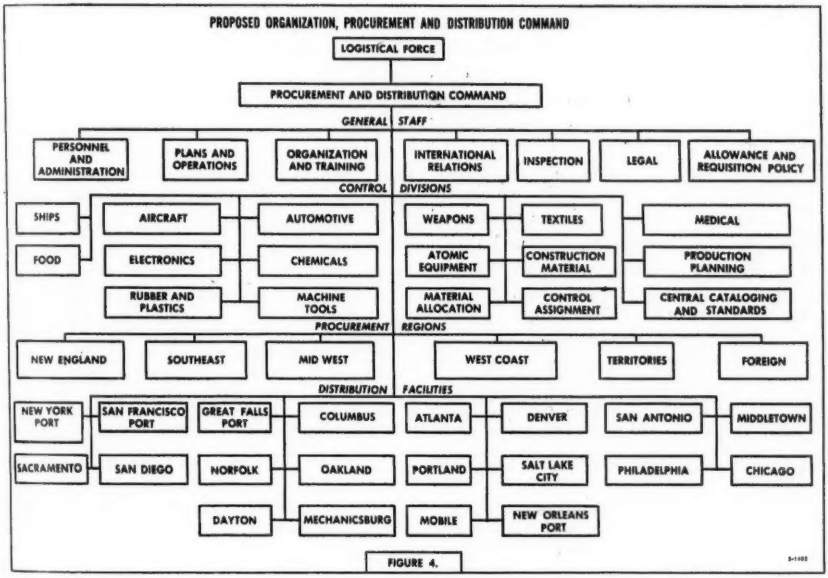


FIGURE 4.

If such integration of management is desirable on a Government-wide basis, how much more desirable is it Department-wide in the Department of Defense? Consolidation of logistics functions into a Logistics Force would naturally result in an organization unit which would manage defense use of commercial transportation and operate Government-owned transportation facilities of all types.

Army-Navy differences of opinion over water transportation and Navy-Air Force differences of opinion and duplication in air transportation would soon disappear as the Logistics Force Transportation Command—not joint, but integral—assumed responsibility. Its personnel, formerly employed by or assigned to the Army Transportation Corps, the Military Air Transport Service (essentially Air Force), and the Military Sea Transportation Service (essentially Navy) would gradually blend into a command with one pride and loyalty, the transportation of the means of defense of the United States.

Under a separate Logistics Force, all acquisition or construction, major maintenance, and disposition of facilities could be made the responsibility of a single command. Consider the improvement in utilization of heavy construction equipment which could be readily effected if it were all under the control of a single agency.

The construction policy and standards would be uniform throughout the armed forces. Personnel of one service would cease to be envied by their service counterparts.

Conclusion

The reader is invited to discover for himself many additional advantages—and no doubt some disadvantages—of organizing the Department of Defense into four principal forces co-ordinated by a general staff (not joint) with a single system of personnel administration.

In order to provoke further thought, four organizational charts showing the proposed relationships are provided in this article. It should be noted that many more currently duplicated or overlapping functions of the three military forces are unified in the proposed organizations. For example:

1. The observing and forecasting of weather, now accomplished somewhat independently by both the Navy and the Air Force, are consolidated in a Service Command under the direct command of the Logistics Force commander.

2. The three present world-wide systems of communication are consolidated in a single Communications Command.

3. The three separate systems of medical service are consolidated in a single Health Command.

4. The three separate systems of finance are consolidated in a single Finance Command.

5. The three separate systems of military justice are consolidated in a single Justice Command.

6. Recruiting service, now operated jointly by the Army and Air Force but separately by the Navy, is unified in a Manpower Command—which, of course, would have many other functions such as assisting the Selective Service System and governmental agencies concerned with migration of the labor force.

7. Mapping, welfare, religious service, oversea schools for children, libraries, postal service, and the various sales stores for food, clothing, laundry, dry cleaning, shoe repair, banking, and miscellaneous—all now more or less independently operated by each of the three forces—are consolidated in a single Service Command.

8. The three military forces now operate numerous supply cataloging systems—even though the Munitions Board has been engaged in developing a unified supply cataloging system for more than 4 years. The Procurement and Distribution Command would, of necessity, have a single system for cataloging supplies.

To conclude, in any collective enterprise of many people, success depends upon two basic conditions: the competence of the individuals and the structure of the organization which makes them a team. Daily press headlines attest our attention to the former. Should we not concern ourselves a little with the latter?

I hold great hope for a peaceful settlement in Korea. The development of our long-range military policy is strengthening our bargaining power in the Korean conflict and is reducing the probability of a total war.

General of the Army Omar N. Bradley

MILITARY NOTES AROUND THE WORLD

UNITED STATES

Modernized Bombers

The last of more than 130 *B-36* bombers modernized during a 3-year program was recently delivered to the Air Force.—News release.

Water Skis for Navy Jets

Successful tests have been conducted of a new water ski device for Navy seaplanes.

Known as the "hydro-ski," the new device will make it possible for high-speed jet aircraft to operate off the surface of the sea.

Hydro-ski-equipped jet fighters would be potentially valuable in forward areas or on special missions, operating with tanker submarines or high-speed mother ships. Their use in forward areas would replace the need for temporary air strips. —*Army Navy Air Force Journal.*

Supersonic Flight

The first supersonic, rocket-powered flight ever to be flown by a United States combat-type experimental fighter was made recently by a Republic *XF-91*. The *XF-91* uses two engines. One is a 5,200-pound thrust turbojet utilized to approach the sound barrier; the other is a 6,000-pound thrust rocket engine to ram the plane through the barrier.—*The Kansas City Star.*

Navy Plane

Another weapon for America's air arsenal—the *P2V-6 Neptune*—is now undergoing flight tests.

Powered by turbo-compound engines, the new twin-engine plane combines long range and high speed with short take-off and landing performance.

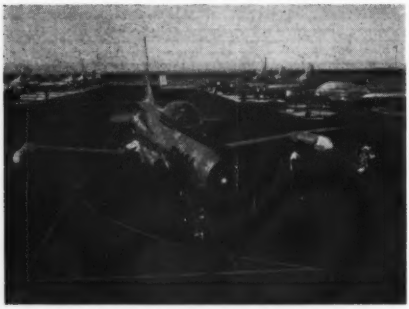
The Navy's new *P2V-6 Neptune.*

Although designed primarily for mine laying and antisubmarine warfare, the plane is convertible for other highly specialized missions, including night torpedo attacks, mast-level bombing, horizontal bombing, and photo reconnaissance.

Other data on the plane have not been released.—News release.

Double Fire Power

One of America's new home-defense airplanes, the *F-94C Starfire*, soon will pack special sidearms to double its fire power (MILITARY REVIEW, Oct 1952, p 64). The sidearms are 12-rocket "pods," affixed to the *Starfire* wings to augment the 24 rockets carried in the nose of the plane.



The *Starfire* fitted with rocket pods.

The new pods are cylindrical in shape. Located approximately half-way out on the wing, from the fuselage, the pods fit back over the leading edge and are attached to the upper and lower surface of the wing.

Rocket pods have a frangible, fiberglass nose cover. A split second before the rockets are unleashed, the pressure of gas built up within the chamber completely disintegrates the nose cover in an outward direction. A negligible difference of from five to eight less knots at maximum speed is the only effect that the removal of the pod nose covers has upon in-flight performance.—News release.

Twin-Jet Bomber

Soon to be produced for the United States Air Force is the *RB-66* twin-jet bomber, now under development by the Douglas Aircraft Company. Based on the *A3D*, originally designed for the Navy, the *RB-66* will carry a three-man crew and is rated in the 600 to 700 mile-an-hour class.—News release.

Women's Army Corps

About 30 percent of the members of the Women's Army Corps are serving in oversea commands.—News release.

Foreign Aid

The United States has poured out more than 87 billion dollars in foreign aid during the past 12 years. Although most of it was in grants and gifts, about 11 billions have been repaid to date.

The Commerce Department in a detailed report said that the United Kingdom, the Soviet Union, and France together received about two-thirds of the total. In all, more than 50 countries or areas benefited.

The United Kingdom received 36 billion dollars in goods, services, and funds which this country gave or loaned abroad. Nearly 29 billion dollars was transferred during World War II.

The Soviet Union, which the Commerce Department called "our former ally," ranked second with 11 billion dollars.

The report, covering both the war and postwar period, listed assistance abroad in four major categories: military aid, relief, recovery and economic aid, and technical assistance.—News release.

Army Aircraft

The Army, under a new agreement with the Air Force, is beginning to build up its own specialized aviation unit to a total strength of about 2,200 helicopters and light planes. About half of the aircraft will be cargo-type helicopters and the other half light planes with an empty weight of not more than 5,000 pounds.

This agreement permits the Army to provide helicopter and light plane airlift for soldiers and weapons "within a combat zone." It does not mean, however, that the Army will have its own transport service for airborne forces. The operation of assault aircraft in a combat zone will continue to be an Air Force responsibility.—News release.

Satellite Space Ship

The co-designer of the German *V-2* rocket said recently that in 10 years (and for 4 billion dollars) America could have a satellite space ship to serve as a jumping-off place to the planets. He stated that if America did not undertake the project that someone else would—and that the Soviets would be "in outer space in 20 years."—News release.

ROTC Graduates

The Air Force has announced that it expects to call to active duty about 8,000 Air Force Reserve Officer Training Corps (ROTC) members who will be commissioned between 1 May of this year and 30 April 1954. Such personnel will receive their orders within 4 months after they are commissioned. The 8,000 will be all the Air Force ROTC students who are non-veterans or who are not deferred for graduate study. The Air Force said that there are no plans at present to call any Air Force ROTC graduates with prior military service.—News release.

Armored Shorts

Armored shorts are being tested in Korea to be used with the present armored vest. The shorts, weighing 4 pounds, cover about four square feet and are made of the same "laminated nylon" material as the vest. Tests have demonstrated that the vest, weighing 8 pounds, deflects about 65 percent of all missiles.—News release.

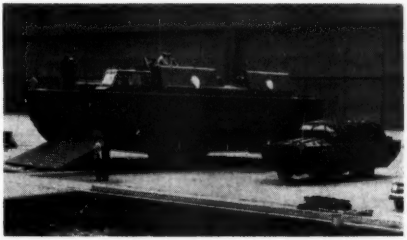
Thunderstreak

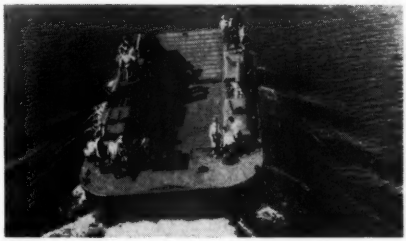
The Air Force recently received its first production model of the *F-84F Thunderstreak*, a swept-wing version of the *F-84 Thunderjet*. Capable of 700 miles an hour, the new *Thunderstreak* is powered by an American-built *Sapphire* engine. It has a range of more than 2,000 miles (considerably more than the current *Thunderjet*), and can be refueled in flight for still greater distance.—News release.

Giant Amphibian

Water, beach sands, and rough terrain behind the beaches are all navigated with equal ease by a new 60-ton amphibious cargo vehicle developed for the Army.

Resembling a scow in general appearances, it is equipped with rubber-tired wheels, measuring 10 feet in diameter,





Above, the *Barc* alongside a World War II DUKW. Below, the *Barc* traveling in water.

for traveling on land and twin screw propellers for propulsion in water. The new amphibian has a specially designed landing-craft type of ramp that permits a loaded tank to leave the vehicle under its own power and fully ready for combat.

This amphibious vehicle, called the *Barc*, is 61 feet in length, 27½ feet in width, and has a height of 16 feet. It is powered with four 165-horsepower diesel engines, one to drive each wheel. The same engines are used to drive the propellers when the craft is afloat. Two engines power each of the two propellers. Easy maneuvering, on land or water, is emphasized as a characteristic of the new amphibian.—*Science News Letter*.

Antipersonnel Mine

The Army has developed and put into production a nonmetallic, antipersonnel mine which weighs only 4½ ounces. Its small size and neutral color make it easy to bury or camouflage and it is readily portable in reasonably large quantities. Designated the *M14*, the mine performs well in extreme temperatures and contains a powerful explosive.—*Report to the Army.*

'Spray On' Transparent Dressing

The Air Force announced recently that it was testing a "spray on" plastic surgical dressing for use in atomic attack as well as for other wounds and injuries.

The transparent plastic dressing, called "aeroplast," is sprayed directly on the injured parts of a victim's body from a pressurized container. Tests to date show it makes gauze dressings unnecessary.

Besides its quick application, "aeroplast" has the advantages of transparency and easy removal. It can be applied by an untrained operative, is less expensive than gauze, and can be stored indefinitely in minimum space. Ordinary gauze dressings are bulky and must be resterilized periodically.

"Aeroplast" is sprayed over a wound in a coating just .005 of an inch thick. It allows the wound to be inspected at a glance.

The plastic can be removed intact and a new coating quickly applied, if necessary, because "aeroplast" sticks only to dry, healthy skin.—News release.

Navy Plane Production

The Navy announced recently that it had cut back the production of three types of new aircraft because they would be replaced by more modern planes.

It ordered a 13 percent production cut in the Douglas *AD-5 Skyraider*, a 33 percent cutback in the North American *FJ-2 Fury*, and an 18 percent reduction in the Grumman *F9F-6 Cougar*.—News release.

Angled Flight Deck for Carriers

Plans to build angled or canted flight decks on United States and possibly British aircraft carriers were announced recently by United States and British naval officers. The extension of flight deck edges to permit a somewhat diagonal landing is expected to increase safety aboard carriers and make for greater efficiency in handling planes during operations.

Essentially, the plan is to extend the edge of a carrier's deck on the port side so that a pilot will make his approach slightly starboard of the stern and then land diagonally across the deck.

The chief reason for the development is safety. As the size of the jet planes landing aboard carriers increases, the presence of the "island," or the operational superstructure that towers above the flight deck about amidships on the starboard side, becomes an increasing hazard. Planes landing on an angled deck would clear the island with more margin.

An additional safety factor also would result by returning to the pilot some of the control over his aircraft that is now placed in the hands of the landing deck signal officer who "waves in" planes.

Under present procedures the signal officer, observing an approach, has full authority on when to tell a landing pilot to "cut" his engines. With the new deck, a pilot will have restored to a greater degree some of his own judgment on when to complete his landing or when to bring his plane up and try for a cleaner approach.—*The New York Times.*

Heavy Tanks

The Army, now building heavy tanks for the first time in its history, expects to have enough ready for field tests this spring. At present the Army has only 85 tanks on order, but a limited production program is scheduled to be continued after officials are certain that all "bugs" have been eliminated.—News release.

TURKEY

Subway for Istanbul

Istanbul's first real subway will cost an estimated 60 million dollars, according to the low bid submitted by a French contracting firm whose specifications are being studied by the municipality of that city. The proposed subway line will provide rapid transport between the Beyoglu and Fatih districts of Istanbul.

Istanbul's present "subway" is a short, two station underground line which saves foot and vehicle passengers the steep climb from Galata to Beyoglu.—Turkish Information Office.

MALAYA

New Army Planned

The British High Commissioner for Malaya announced recently that Great Britain had decided to set up a full-scale new army in Malaya as a major step toward giving self rule to the troubled Federation.

The Commissioner stated that the "broad concept" was to equip and train a Malayan force that "can be relied upon to maintain law and order internally and play a major part in deterring an external aggressor."

Plans for Malaya include:

1. A 240,000-strong home guard which is being set up, trained, and armed to defend the peoples' "hearths and homes from the terrorists."

2. A drive by the 68,000-strong Malayan police force to "stimulate good will and understanding with the public."

3. Multiracial Federation regiments and an armored corps are being expanded to form the nucleus of the eventual army in which the Malay, Chinese, Indian, and Eurasian elements of the population will serve.

4. A development board which will tackle some of the Federation's long-term economic and social problems.—News release.

GUATEMALA

Television Stations

The Ministry of Communications has announced that the Government will begin issuing licenses within a year for the construction of television stations.—News release.

AUSTRIA

Oil Production

The Minister of Trade has announced that Austria now is the greatest oil producing country in Europe, but it does not help the Austrians.

From a prewar production of a few thousand tons a year, output has been stepped up—first by the Germans and later by the Soviets—to its present level of more than 3 million tons a year. This far exceeds present production in the Rumanian oil fields.

In addition to draining away Austrian oil, the Minister charged that the Soviets drew at least 131 million dollars yearly in taxes and customs.—News release.

United States Forces' Expenditures

American occupation forces are Austria's chief source of dollars outside the official American economic aid program.

The total expenditure for 1952 by the United States forces in Austria, as an employer of Austrian labor, purchaser of goods, and paying customer of railways and communication services, is estimated at 737 million schillings—the equivalent of $28,350,000.

The forces' expenditures exceeded the amount that all foreign tourists spent in 1952 visiting Austria.

No part of this expenditure represents any burden on the Austrian population, because American occupation costs have been paid in dollars by the Americans ever since June 1947. The dollars spent by the Army or its members are handed to the Austrian National Bank, which disposes of them for the benefit of the country, its population and economy.—News release.

THE NETHERLANDS

Ship Contract

The Netherlands and the United States recently signed a 29-million-dollar contract for the building of 18 minesweepers and 5 submarine chasers in Dutch shipyards. This brings the total of minesweepers to be built in the Netherlands for North Atlantic Treaty Organization countries up to 32.—News release.

NORTH ATLANTIC TREATY NATIONS

Allied Armies Renamed

Supreme Headquarters, Allied Powers, Europe, announced recently that the North Atlantic Treaty forces in Germany henceforth will be known as the Northern Army Group and the Central Army Group.

General Sir Richard Gale, now commanding the British Army of the Rhine, will be commander of the Northern Army Group, which will consist in addition to four British divisions of three Belgian divisions, a Canadian brigade, a Norwegian brigade, a Danish battalion, and, at certain times, a Dutch division.

Lieutenant General Manton S. Eddy, commander of the United States Army in Europe, will head the Central Army Group, which consists of five United States divisions and five French divisions. —*The New York Times.*

MONACO

War Damage

Monaco recently received $80,000 from Italy in payment for war damages. Monaco is seeking reparations also from France, Germany, and Great Britain for war damage.

Total damage is estimated at almost 6 million dollars. Most of it occurred when British planes bombed nine German ships in the harbor and a blockhouse in the center of Monte Carlo in 1944.—News release.

INDIA

Trade Agreement

India has signed an agreement with Argentina to trade 44,000 tons of jute and other goods for wheat.—News release.

CANADA

Potash Deposits

A new phase in prairie agriculture has been recorded with the discovery and development of valuable potash deposits near the Saskatchewan centers of Vera and Unity.

Potash—actually potassium chloride—is one of the world's most important mineral fertilizers and is rarely found in commercial quantity and concentration.

Besides the Saskatchewan deposit there is only one important one in the Western Hemisphere. It is located at Carlsbad, New Mexico. The only other known large deposit in the world is in Germany's Stassfurt Basin. The full extent of the Vera-Unity deposit has not yet been determined. —News release.

Iron Ore Deposit

A multimillion ton iron ore deposit has been discovered in northern Quebec. The location of the deposit, near the western shore of Ungava Bay and the Payne River area, makes Europe the logical route to market. The ore is on the surface and can be easily mined, but some way must be found to process the ore on the spot, to avoid a long water haul to processing plants and subsequent shipment in its refined state, before the new find can be exploited. Processing of the ore where it is mined would mean that is would be ready for the blast furnaces of Britain and other European countries. Extensive power facilities would have to be set up, while elaborate and expensive processing equipment would have to be transported to the site of the deposit before work could get underway.—*The New York Times.*

AUSTRALIA

Airfield Development

Australia's Chief of Air Staff has announced a 5-year plan for airfield development. It will give the Royal Australian Air Force 100 new runways and improved facilities to cope with the increasing number of aircraft in use by the service.—News release.

Atomic Energy Commission

The Minister of Supply announced recently that Australia had decided to set up an atomic energy commission. Under the commission, all atomic activities will be co-ordinated in a single authority.—News release.

Radar-Bombing Test Range

The Minister for Air announced recently that the Federal Government had reserved Cartier Island in the Timor Sea as a permanent site for radar-bombing tests.

The island is within bomber flying range of the Royal Australian Air Force base at Pearce, Western Australia, of the Woomera Rocket Range, and the rocket range's base at Salisbury, South Australia.—*Australian Defence and Services Newsletter.*

Army Strength

The Minister for the Army has announced that the strength of the Australian Army will be about 125,000 by the end of the year—100,000 in the Citizen Military Force and more than 25,000 in the Regular Army.—News release.

Radar Tracks Air Streams

Special meteorological stations using high-flying radar balloons have been set up to investigate reports of streams of air traveling at phenomenally high speeds over Australia. These air currents have also been reported recently over Japan and North Africa, traveling at 200 and 300 miles an hour at heights of 28,000 to 30,000 feet.—News release.

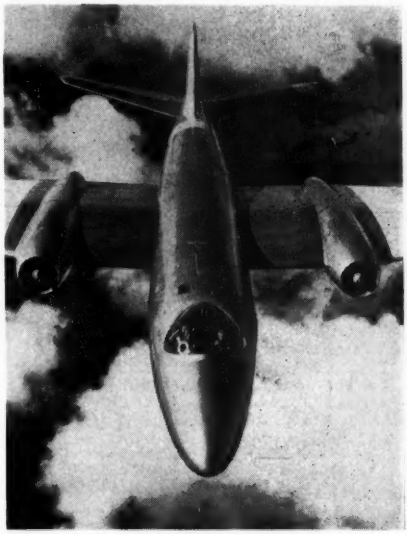
GREAT BRITAIN

Destroyer for Denmark

Great Britain is going to lend Denmark the 1,050-ton destroyer *Exmoor* for 4 years for use in the Danish Navy.—News release.

Flying Classroom

A new version of the British *Canberra*, the jet bomber which recently made a double crossing of the Atlantic in a single day, recently made its appearance as a



The trainer version of the *Canberra* bomber.

flying classroom. It is claimed to be the first twin-jet trainer with side-by-side seating for pupil and instructor.—British Information Services release and photo.

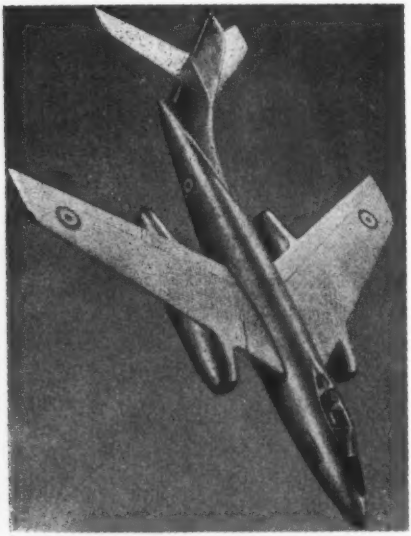
Renew Antarctic Pact

Great Britain, Argentina, and Chile, in an exchange of notes, recently reaffirmed their agreement not to send armed expeditions into disputed antarctic territory. All three, which exchange the notes annually, claim rights in the area.—News release.

FRANCE

Ground-Support Plane

The twin-jet *SO.4050 Vautour* recently completed its first flight. Although intended primarily for ground-support



The new twin-jet *SO.4050 Vautour*.

duties, the plane can be used for pursuit or bombing missions.

No other data have been released about the plane.—News release.

United States-Built Pipe Line

The United States Army announced recently that a 375-mile pipe line would soon be laid from the French coast to the West German frontier to provide fuel for United States jet planes. It will run from near St. Nazaire through Melun to Metz. —News release.

Miniature Jet Plane

France claims to have built and flown the world's first miniature jet plane. It has a span of 23 feet, length of 17 feet, and a height of 6 feet. It has a top speed of 250 miles an hour.—News release.

ITALY

High-Speed Train

Italy's new streamlined Rapido electric train recently reached a speed of 149.04 miles an hour on a test run between Piacenza and Bologna.

The speed was so great that one of the contacts with the overhead power cable broke, shattering the window of the control cabin and injuring the train's designer who was at the controls.—News release.

Travel Behind the Iron Curtain

The Government announced recently that since 10 November 1952 no ordinary passport visas have been issued for the Soviet Union, Czechoslovakia, Poland, Hungary, Bulgaria, Rumania, Albania, and China and that none would be issued in the future. Under a similar restriction, the Government canceled all Italian passports valid for travel to Austria. Special visas for Iron Curtain countries will be issued only to persons who can show specific and well-documented reasons for wishing to visit them.

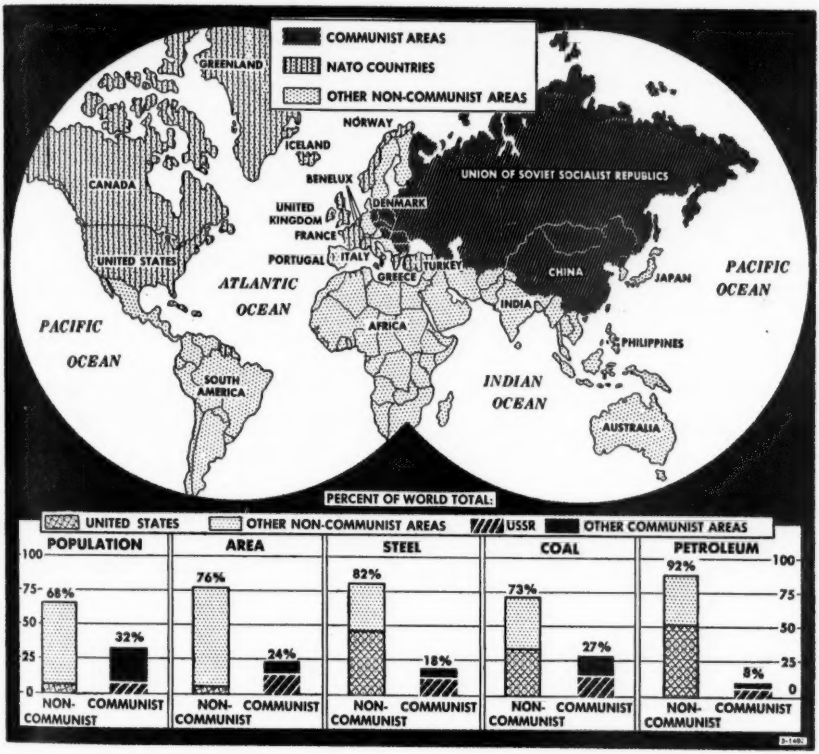
The new regulations will apply also to Members of Parliament, who hitherto used passports not issued by the Foreign Ministry and who could, therefore, travel to the other side of the Iron Curtain without informing the Government of their intention.

It is believed that the Government's action has been prompted mainly by a desire to interrupt the constant traffic of Italian Communist leaders and agents to and from Communist countries.—*The New York Times.*

American Army Camp

The United States Army has dedicated a new and permanent 3-million-dollar camp to house 1,000 American soldiers handling supplies going through Leghorn to United States occupation forces in Austria.—News release.

Two Worlds—Communist and Non-Communist Spheres Compared



BRAZIL

Vote Machine

Brazil has ordered a United States voting machine for study and to see if use of the device could speed its elections.

The action for studying the voting machine followed an article in a Rio de Janeiro paper about the speed with which results were made available during the recent Presidential election in the United States.

In Brazil it quite often takes a month to ascertain who is elected.—*The New York Times.*

KOREA

Mobile Clinics

Four traveling clinics—large trucks fitted with everything from hypodermics to movie projectors—are being sent to Korea by the United Nations Korean Reconstruction and Relief Agency to help the civilians battle against disease. The units will be manned by a crew of three—a doctor, a nurse, and a driver-technician—which will be recruited and paid by the United Nations agency. They will provide facilities for diagnosis, inoculation, and emergency treatment.—*The New York Times.*

EASTERN GERMANY

Radio Transmitters

The Soviets are building five giant transmitters in Eastern Germany to beam Communist propaganda to all of Western Europe.—News release.

NORWAY

Military Equipment

Norway recently received a shipment of 5,000 tons of military equipment—trucks, ambulances, and trailers—from the United States, bringing the total volume of military matériel supplied under the Mutual Defense Assistance Program to 125,000 tons, not counting aircraft.—Norwegian Information Service.

Power From Tirpitz

Four 750-horsepower auxiliary engines salvaged from the wrecked German "pocket" battleship *Tirpitz* in Tromso Fjord are now supplying power and light for small fishing ports along the north Norwegian coast. Another engine provides power for a factory at Melbu. To date, salvage crews have recovered five auxiliary engines from the sunken warship and are now concentrating on salvaging the vessel's main engines. These workmen so far have removed 20,000 tons of scrap metal and other material from the sunken hulk.—*The New York Times.*

Motor Torpedo Boat

The Royal Norwegian Navy has built a motor torpedo boat which is claimed to be faster and more maneuverable than any other similar type craft.

Powered by Packard engines, the torpedo boat has a displacement of 70 tons, fully loaded. Its equipment includes four torpedo tubes, one Bofors gun, as well as Oerlikon antiaircraft artillery.

After further tests and technical changes, the Norwegian Navy plans to build a series of similar motor torpedo boats.—Norwegian Information Service.

COMMUNIST CHINA

Military Airfields

An underground press dispatch from Canton says that the Chinese Communists now have 15 airfields in the South China provinces of Kwangtung and Kwangsi. The dispatch estimated there are 340 planes on the fields, ranging from trainers to Soviet-made *MiG-15* jet fighters.—News release.

USSR

Troop Transport Fleet

The Soviet Union now has available as troop transports 14 former German and Polish passenger liners and probably 30-odd Liberty ships lent to her under lend-lease and never returned, according to a report by the American Merchant Marine Institute.

It is estimated that these vessels would give the Soviet Union a troop-lift of approximately 100,000 men; half in the passenger ships and half in the cargo craft. —*The New York Times.*

Mother Plane

The Soviet Union has developed a mother plane which can carry two jet fighters around at high altitude until they are needed for combat, according to the 1952-53 edition of *Jane's All the World's Aircraft.*

The unofficial but authoritative aviation handbook described the flying aircraft carrier as a modified version of the four-engine *Tu-4*, a Soviet copy of the United States *B-29.*

The *Tu-4s* have been fitted with a girder-type structure on the leading edge of each wing to which *MiG-15* jet fighters can hook themselves after take-off. The fighters can disengage from the mother plane when enemy planes are sighted.

The object of the mother plane-fighter combination is to conserve fuel which the jets otherwise would have to burn while climbing into action.—News release.

FOREIGN MILITARY DIGESTS

A Study of German Defeat in Two World Wars

Digested by the MILITARY REVIEW from an article by Major General B. T. Wilson in "The Army Quarterly" (Great Britain) April 1952.

SIR David Kelly, lately British Ambassador in Moscow, recently drew attention in the *Sunday Times* to the impersonal view of history favored by the Soviets. They are apt to regard the chief ministers of great states as mere marionettes actuated by the strings of fate—Tolstoy develops the same theme about generals in his great book *War and Peace*.

Farther to the west in Europe, modern German philosophers like Nietzsche and Spengler still believe gloomily in the predestined rise and fall of nations and the word *Schicksal* (fate) constantly crops up in their writings. Nietzsche, however, takes the added view that the impotence of ordinary individuals to influence events is rectified by the emergence of "supermen" who fashion history and make it intelligible. Only a nation which is waxing great produces them.

These mischevious doctrines seem to have had a most pernicious effect on German contemporary thought and action. Of their own confession, the Germans are spiritually inert and require leaders who goad them into action. They love order more than freedom, and tolerate restraints which in other nations have constantly led to great revolutions, whereas German history can point to none.

These several characteristics, in addition to the virtue of being incomparably industrious and of great physical courage, make the Germans most formidable in war. Under great leaders they achieve astonishing results and under bad ones they fight on to disaster perhaps longer than any other race—which has its disadvantages.

During the last three centuries, among many other rulers and statesmen, four men in particular have decisively influenced the history of Germany. They are Frederick the Great, Bismarck, Kaiser Wilhelm II, and Hitler. Their contrasting characters are a measure of the splendors and miseries which have been the lot of Germany.

Frederick the Great

The great King established the power of Prussia by consummate statesmanship, hard fighting, and grinding administrative work, in all of which he played a lead-

ing part himself. When his policy had recourse to the *ultima ratio regum*, which words were inscribed on his field guns, he was his own commander in the field.

Louis XIV on a famous occasion flamed out *"L'etat, c'est moi,"* but no verbal fireworks were required to emphasize the supremacy of Frederick the Great.

Although he acted right up to the limit of his power in all his enterprises, his shrewd judgment never permitted him to underestimate his enemies or to overlook disagreeable facts.

He left behind to his successor a greatly enlarged Prussia, a well-filled treasury, and a first-class army of 200,000 men all of which were the fruits of an almost perfect balance of policy and power both in war and peace.

However, his system of personal rule, so effective in the hands of a genius, worked badly with mediocre successors. Moreover, the people of Prussia took little or no part in the government of their country.

Bismarck

It fell to Bismarck, also a Prussian, to establish the German Empire of the nineteenth century after the deluge of the Napoleonic Wars. This remarkable man, like Frederick the Great, was the greatest exponent of his day in the use of war as a "continuation of policy." His wars against Denmark in 1864 and Austria in 1866 were deliberately contrived so as to transfer the headship of the South German states from Austria to Prussia. Finally, as a result of the victory over France in 1871, he was able to weld all of them into the German Empire.

Nationalism and World Citizenship

During his 28 years as Chancellor, in a Europe which was becoming permeated with liberal ideas, he allowed some measure of popular participation in the government of the country. He also awakened in the often unresponsive German mind ideas about nationalism and world citizenship which ultimately became dangerously exaggerated.

However, the *Reichstag*, in spite of great efforts to acquire it, was never allowed control of foreign policy or of the fighting services. Nor did he allow the people to change the government of the day by the exercise of the franchise.

The German General Staff, originally created in 1805 to plan the war of liberation from the yoke of Napoleon, confirmed its value during his sequence of successful wars. By its agency, the elder Moltke effected the rapid movement of troops by rail in a manner astonishing not only to the enemy but also to foreign observers. Even Queen Victoria spoke with distaste of the "clever use of the railways" by the German armies.

This same General Staff, having made a great name for itself, finally came to usurp power in the state, which proved to be disastrous. However, as long as Bismarck was Chancellor, the wheels of the well-constructed military machine only turned in accord with the requirements of his policy.

Well aware of the delicate position of Germany in Central Europe, surrounded as she was by great and jealous states, he was careful to maintain a balance among them which ensured the peaceful and prosperous development of his country right up to the end of the nineteenth century.

Treatment of France

He was generous to the defeated Austria, but made one of the chief blunders of his career in his treatment of the defeated France. The French would, in time, have forgotten the humiliations of the Hall of the Mirrors at Versailles and the very reasonable indemnity, but they could not forgive the seizure of the fair province of Alsace and part of Lorraine.

Bismarck and the Junkers strongly disapproved of the liberal form of British

government and partly for that reason resisted any rapprochement with Great Britain. However, he never made any attempt to challenge British supremacy at sea.

Bismarck Was Disliked and Feared

In negotiation he was prone to bad manners and double dealing which made him disliked and feared by his contemporaries at home and abroad. His example in this respect at a time when Germany was a sound and powerful state was later to be imitated by his successors, when she was still powerful but no longer sound.

In 1890, when the Kaiser removed Bismarck from his office of Chancellor, Germany stood at the zenith of her meteoric rise to greatness. Like Frederick the Great, Bismarck had ordered the affairs of state right up to the compass of its powers. However, his overrigid oligarchy always denied effective participation in the Government to the now highly educated, industrious, and supremely capable German people.

The origins of the great tragedy of twentieth-century Europe in which Germany was soon to play the leading part are largely to be explained by this divorce between the people and the Government which Bismarck had been at pains to ensure.

Kaiser Wilhelm II

When the Kaiser assumed power, his rhetoric and self-adulation tended to cloud not only his own sense of reality but also that of his advisers. Above all, the German people gradually came to lose theirs.

Nominally in supreme charge of the chief activities of the Government, he saw and annotated the more important state papers, but he signally failed really to control the great offices which were responsible for foreign policy. Under Bismarck, the Foreign Office and the General Staff had been directed by a master hand, but they now began to get out of control. They were no longer content with the peaceful progress which was rapidly turning Germany into a world power with important possessions overseas. Gradualism had no message for them.

The plausible Chancellor, Count von Bülow, the sinister Foreign Minister Baron Holstein, and the classically minded Count Schlieffen of the General Staff began in 1905 to weigh the chances of quickly gaining the hegemony of Europe by defeating France in a war of hitherto unexampled speed.

Passion for the Sea

The Kaiser, who liked saber rattling without actual fighting, aided and abetted these real warmongers by his passion for the sea. When several European nations furiously disapproved of Britain's action in the Boer War, he had noted how powerless Germany was to injure an island country which was supreme at sea. This fact and his love of ships determined him to be the war lord of a great fleet as well as of the finest army in Europe.

The advent of a German Navy of impressive size and undeniable quality no doubt persuaded the warmongers that it might suffice to overawe Great Britain long enough for Germany and her allies in a lightning campaign to dominate Europe on land. In a few months the conquest would be complete and Great Britain would be presented with a *fait accompli.*

The General Staff had no high opinion of the Russian Army owing to its poor showing in the Russo-Japanese War of 1904. The speedy elimination of the French Army was accordingly its immediate object. It was against France on the Western front that the chief efforts of Germany were destined in fact always to be directed.

Count Schlieffen proceeded, therefore, to make a profound and rather pompous study of the battle of Cannae with the idea of adapting its tactics of envelop-

ment to a grandoise strategical plan for the defeat of France. Its culmination was to be a battle of annihilation (*Vernichtungsschlacht*) in southeastern France, timed to take place about 6 weeks after the German armies had crossed the frontier.

While France was being disposed of in the West, Austria would be strong enough to hold off Russia in the East, where a few German corps would safeguard East Prussia. As soon as France had been defeated, the combined forces of Germany and Austria would soon settle accounts with Russia. What Napoleon had failed to achieve in years of warfare, Germany would effect in a matter of months.

In all this planning for victory on land, Great Britain was rather left out of the picture, but not because she had been overlooked. The "land beast" was merely experiencing the usual dilemma—how to deal with the "beast from the sea."

The power of the sea had proved too much for Napoleon, so that the planners must have considered carefully whether Britain's ships would not also turn the scale against the First *Reich*. They appear to have reached no such conclusion.

Always hypnotized by the 6-week triumph of the Franco-Prussian War in 1870, they argued that Britain remained neutral then and would do so again. This oversanguine belief was partly a fond hope and partly because of the opinion that Great Britain was decadent. Unmindful of the old moralist's observation that he who speaks much of a particular failing in others is nearly always prone to it himself, the German leaders began to speak with increasing arrogance of the obvious decay of the British Empire—Great Britain was likened to a sprawling modern Carthage which on the appointed day (*Der Tag*) would be destroyed by the Rome of modern Germany. As Great Britain with her great empire, her rule of law, and her long history of parliamentary government seemed far more suited to play the part of Rome than Germany, the comparison caused little dismay across the North Sea—in fact the boot seemed to be on the other leg. However, the story well illustrates the kind of false assumptions which were shaping the counsels of the Kaiser.

Bismarck had set Germany on to a dangerous course of aggrandisement, which the Kaiser followed even more boldly. However, he lacked the statesmanship and the personal authority of the old Chancellor under whose iron control an outdated system of government at least worked effectively. Under the Kaiser the defects in the structure of the German state yawned and cracked into a condition of almost Byzantine rottenness.

The Kaiser will always be blamed as the man who could have prevented World War I but did not do so. We have it on the authority of Sir James Edmonds, the British official historian, that the Kaiser did not want it. When in 1914 the gathering clouds of the approaching storm were at last rent with the thunder and the lightning of ultimatums and declarations of war, the Kaiser was appalled. To the minister who laid before him for signature the ultimatum to Russia, he is believed to have said, "You are asking me to sign the death warrant of Germany." Unhappily for him and his country, the warmongers of the German Foreign Office and the General Staff had already done their fell work. The German people, headed by the Crown Prince, were now aflame. It was too late to draw back. The first act of the tragedy was about to begin.

German Military Errors in 1914-18

The German defeat on land and sea cannot be attributed to shortcomings of any kind in the junior leaders or the rank and file of the fighting services. The way in which they and the German people them-

selves respectively fought and endured compels admiration. However, their leaders made fateful errors.

In the challenge to Great Britain at sea, Admiral Tirpitz tried with much boastful noise to create a "High Seas" Fleet capable of disputing the mastery of the North Sea and its approaches. If he had at once accepted the role of a weaker naval power and devoted his main energies to the development of the submarine, the results would have been formidable.

By the end of the nineteenth century it was already clear that the submarine would be a grave threat to surface ships. France about that time started without sound and fury to create a sizable force of these vessels. But Germany did not really develop the submarine until the war was imminent. Her submarine strength and experience thus grew only slowly after the outbreak of the war and gave time for countermeasures to be devised.

This grave error in the German appreciation of the war at sea is one for which Britain can be profoundly thankful. Even as it was, German U-boats played havoc with our essential supplies of food and war material.

The handling of submarine warfare was a new and thorny problem. Undecided about the restricted or unrestricted use of submarines, the Germans yet used them sufficiently to bring the United States into the war. If they had stuck strictly to legitimate targets while gaining experience and building up a large fleet of U-boats, they could have kept unrestricted submarine warfare in "general reserve" and then used it like a bolt from the blue at the crisis of the war. The United States might also have been kept out of the war until even later than 1917.

In keeping with the erratic handling of the submarine campaign German surface strategy was patchy and spasmodic. After the Battle of Jutland, the High Seas Fleet never seriously put to sea again, and when ordered to do so at the end of the war, at once mutinied.

The German Navy cannot be criticized for not attempting to destroy the British Expeditionary Force on its way to France in 1914. The younger Moltke said that it was not necessary, adding with misplaced assurance that it would be good to deal with the British Army "once and for all" along with the French and Belgian Armies.

Success Depended on Speed

In 1914 on land, the Germans did not really dispose of sufficient formations to carry on a long war in Europe on two fronts. Their success or failure depended on a rapid and annihilating defeat of France. This was too much of a gamble to be considered as good planning. France was quickly defeated in 1870, but then had a defective government and no powerful allies. It did not follow that she would fail so rapidly again. However, the gamble nearly came off.

Causes of Failure

The main causes of failure seem to have been three in number:

1. Indecisive control by the younger Moltke, Chief of the General Staff.

2. Inadequate signal communications from the German High Command to the advancing armies.

3. The inherent defects of the Schlieffen "battle of annihilation."

French Command Better Informed

The French High Command was better informed than the German High Command of the course of events and reacted quicker to them, whereas the First and Second German Armies both got out of control and drifted apart. There proved to be insufficient troops for the gigantic Schlieffen left wheel, so that finally Paris, the capital and nerve center of France, could not be included in it.

Just before the climax of the battle in the West, two German corps were sent to East Prussia in response to a clamor for reinforcements from the East. Like D'Erlon's "unhappy columns" countermarching between Ligny and Quatre Bras, they took part in neither battle. Compare how Foch immediately refused reinforcements to the British Army in Flanders in 1918. He reckoned that *les anglais* would sort it out somehow or other! Some of the same medicine from Moltke to the Eastern front might have enabled him to win the battle of Paris instead of losing the battle of the Marne. The First German Army was only 30 miles from Paris when it turned to the southeast. If the German armies had given up the Schlieffen wheel and marched resolutely southwest in echelon from the north, Paris might have been captured. In the subsequent race to the sea, all chance of seizing the Channel ports was also lost. The lessons of the Marne evidently sank deeply into the minds of German soldiers. In 1940, their strategy was devised to capture the Channel ports and also Paris.

Britain the Chief Enemy

At the end of 1915, Falkenhayn, the new Chief of the General Staff, was firmly of the opinion that Great Britain was now the chief enemy. However, in his appreciation he came to the extraordinary conclusion that for Britain the war in France was only a sideshow. He suggested rather wistfully that if France were knocked out of the war, Great Britain might come to terms. The idea of invading England was dismissed in a sentence and a further attack on the British Expeditionary Force early in 1916 was deprecated because the ground there was flooded. Fortresses had not helped the Belgians, therefore the fortress of Verdun would not help the French against the special German siege guns.

The glaring errors of this appreciation speak for themselves. It suffices to point out that a full-scale attack on the junction of the British and French Armies would have anticipated the Somme battle which, although it cost the newly formed British Army terrible casualties, was also the graveyard of the old well-trained German Army.

Decline of Power

The Verdun area was studded with forts which proved difficult nuts to crack. The German formations never succeeded in advancing more than a few thousand yards at a cost of nearly 300,000 casualties. The Somme battle duly followed. In the midst of it Falkenhayn was removed. His plan for 1916 had been a disastrous failure.

In 1917, Russia went practically out of the war, France was in dire straits, and Italy suffered the defeat of Tagliamento. Germany should have made peace then, on the best terms she could have got, but with characteristic intransigence she stood out for too much. By 1918, the British blockade at sea had reduced the German people nearly to starvation and the home front was cracking. More than a million American soldiers were massing on French soil, more than half of whom had been lifted there in British ships. Thus, Ludendorf's attack in 1918 was even a bigger gamble than that of the opening campaign in 1914. It was the last throw of an arrogant and outdated ruling caste which, as such, never acquired the same power again.

Moral and Political Failures in 1914

The military errors of a nation which is fighting a total war tend more and more to derive directly from a faulty orientation of its people and from defects in the government of their daily life.

The commanding position which Germany had so quickly gained in the nineteenth century, accompanied as it was by great material prosperity, undoubtedly

encouraged a belief in the mischievous theories of her contemporary philosophers which have already been mentioned. In the 20 years which preceded 1914, a noticeable arrogance was apparent in the behavior of all classes of German society. It led them into the age-old mistake of despising their future adversaries.

Perhaps the most important result of this mistaken attitude was the assumption that Great Britain was decadent and would look on unmoved while Germany overran Europe. Another was the failure to comprehend the enormous potential military strength of the United States. Symptomatic of this were the futile blunderings of the German secret service in Mexico which, added to the exasperation caused by the submarine campaign, finally brought America into the war. As has already been described, the same arrogance of outlook colored disastrously their plans of war both at sea and on land. Nor did their allies escape it. Falkenhayn complained bitterly that co-operation with allies, notably Austria, "was very imperfect."

In the matter of government one nation's meat is another's poison. The British form of flexible parliamentary government suits the Anglo-Saxon races, but it may not produce the best results in other countries. Many European nations have indeed struggled ever since the French Revolution to work out enduring systems of democratic government. Except among the smaller countries, they have done so with a conspicuous lack of success.

So it would be unfair to say that the Kaiser's government was bad just because it did not fulfill Lincoln's dictum about "government of, by, and for the people." However, a system which allows a general staff to assume almost complete control of a state engaged in a desperate war seems to bear no relation to modern civilization and must be a bad one. Even in 1914, this inability of the German people to govern themselves effectively must be reckoned as a prime factor in their ultimate defeat.

Adolf Hitler

Even in the bitterness of defeat and the hunger of near starvation, the Germans of 1918, with a clemency that still astonishes, allowed the guilty Kaiser, with his galaxy of princes and barons, to vanish unscathed into comfortable obscurity. They clearly retained an affection for the glittering décor of the Imperial Court and a fond recollection of the splendors of the past. Between the wars, the Kaiser's palace was kept as a show place where the curious could see, *inter alia*, his banqueting hall set out with gold plate, fine linen, and costly glass. Only the vast *Zeughaus*, or military museum, could rival the palace as a place of pilgrimage for the populace on Sunday afternoons.

Hindenburg and Ludendorf, whose control of events between 1916-18 was nearly absolute and who were personally responsible for the final defeat of Germany in the field, continued to enjoy the profound esteem of their countrymen. The illustrious Hindenburg became President of the Weimar Republic in 1923, while Ludendorf busied himself with less luster in subversive activities against it.

The honors thus paid to their old leaders showed how familiar the Germans were with the vicissitudes of war. They could stomach defeat and bide their time. Meanwhile, they fully believed the General Staff legend that the German Army had not been defeated in 1914-18.

The government of their prostrate country soon proved to be beyond the powers of the well-intentioned ministers of the Weimar Republic. They got through much unpleasant administrative drudgery but lacked experience in the maintenance of law and order. As order and discipline are as necessary to the Germans

as the breath of life, their absence created a vacancy which was soon attended to by Hitler and the Nazi Party. Hitler had not only magnetic power with voice and gesture over any German assembly, but also solved a grave political crisis by putting several million unemployed on to public works and into the manufacture of war equipment. The people thus came to believe in him and welcomed with enthusiasm his plans for making Germany again great. Aware of the desire for dominion which seems endemic in every German breast, he cunningly utilized it in establishing the Nazi tyranny, the ramifications of which went right down to the leaders of blocks of houses in the towns and of hamlets in the country. Such leaders were as easily to be found as lance corporals in the German Army, who were not wont to hang back as they so often do in British units.

The ordinary *Schützpolizei* or civil police of the Kaiser's time had exercised a far reaching but benevolent control of everyday life of German citizens. By superimposing *SS* men, the Nazis saw to it that the police system continued to be far reaching but ceased to be benevolent.

The last relics of the representative government attempted by the Weimar Republic were swept away in 1933, seemingly without much regret from the bulk of the German people. Indeed, their belief in Hitler coupled with the subtle control system of the Nazi Party enabled him to all intents to "fool all the people all the time," a feat which Lincoln once declared to be impossible.

Hitler's power soon became far greater than that of any cruel and decadent emperor in the worst days of Rome. It did not depend on the fickleness of legions or the venality of praetorian guards but was guaranteed by the unquestioning discipline and almost hysterical enthusiasm of the people.

They saw him frequently on public occasions, at which he appeared in the warlike field boots, jacket, and breeches of the all-powerful generals of 1914-18. The outstretched hand of the Hitler salute, staggering the mind with its grotesque inanity, became the compulsory form of greeting between all Germans. Foreigners had to suffer it too. Indeed, Ribbentrop, the German ambassador at St. James', in an ecstasy of arrogant spleen, gave the new German salute to the late King George VI at a Royal Levée. No wonder that the more thoughtful of the enraged observers deemed that some strange distemper was attacking Germany—as indeed it was.

New European Order

Having acquired absolute control of the state, Hitler could now consider how to carry out the conquests which were necessary for the establishment of the new European order of his dreams. This preliminary planning proved to be a far more difficult task than becoming dictator of Germany.

Men of humble origin but of natural nobility of mind usually find little difficulty in moving with equal ease in all classes of society. Hitler never acquired this facility. It was an embarrassment to him to discuss a problem on level terms with the educated and the well-bred, especially if they had the courage to disagree with him. He preferred a monologue.

The senior officers of the German fighting services either came of well-known families or had at least been brought up in the old aristocratic tradition. After 1914-18 they still retained much of the old professional and social distinction which they enjoyed under the Kaiser. Their ability in their several fields was unquestioned so that they kept a jealous hold over the services which they controlled and resisted the influx of Nazi ideas.

It was to these men and not to the ob-

sequious bosses of the Nazi Party that Hitler had to turn for the drafting of the plans of aggression by sea, land, and air, which his hasty and grasping foreign policy now required.

The Luftwaffe

The *Luftwaffe*, perhaps unfortunately for Germany, presented no difficulties to Nazi control. It had been quickly and to all appearances effectively built up by Göring, who was second only to Hitler in the Nazi hierarchy. He was a good organizer and had been a celebrated flying "ace" in 1914-18. Even Hitler with his photographic memory could not hope at first to cope with the operational and technical problems of air power. For better or worse, he left them to Göring who remained in charge of the *Luftwaffe* until almost the last days of the war.

The Navy

As Hitler had scarcely ever set eyes on the sea and had a wholesome fear of it, he also gave a tolerably free hand first to Admiral Raeder and then to Admiral Doenitz in the direction of the war at sea. The German Navy, as a result, largely escaped Nazi interference and, although subject to Hitler's intervention in matters of high policy, was master of its own fate. It even managed to dodge the imposition of the Nazi salute.

The Army

The German Army, which had always been the senior partner in Germany's wars, was Hitler's chief preoccupation. Although his practical knowledge derived only from service in the ranks as a corporal, he had studied "great books on war" and was convinced that he had a good grip of the military art. For a time he toyed with the idea of turning the *SA* Brownshirts of Roehm into the conquering army which he required and of dispensing with the reactionary *Reichswehr*. The "Night of the Knives" in June 1934, however, marked with suitable bloodshed his final decision in favor of the *Reichswehr*. Soon afterward more than a million Brownshirts broke up and disappeared.

With the selection of the *Reichswehr* for expansion into his conquering army, Hitler's troubles with the generals began and were destined never to end.

Although the temptation to blame Hitler for all the disasters which in due course overtook the German armies was, and still is, almost irresistible, the generals seem to have had ample justification for complaint. Like almost all laymen, even the most able and distinguished of them, Hitler could never appreciate the full significance of the imponderable in war. Such factors as training, fatigue, wastage, logistics, and, above all, the time lag, which clogs every military activity, did not really figure in his picture of an army in the field. Like so many other statesmen in 1914-18, he was a counter of heads irrespective of their quality or of time and space. The results of this practice are disappointment and exasperation to all concerned.

Professionals Par Excellence

Professional soldiers, like engineers in the design of a bridge, have a distinct penchant for a reasonable factor of safety when they plan a campaign. The laurels of victory are shared by many, but the odium of defeat is apt to descend rather exclusively on the heads of the soldiers.

The German generals were professionals *par excellence*. Although, in the old German tradition, supremely disposed to the attack which always triumphs, they were experienced enough also to like the factor of safety without which such triumphs are apt to go astray.

Knowing how basically ill prepared, trained, and equipped the Army was, they advised most emphatically against all Hitler's earlier enterprises; but the mili-

tary occupation of the Rhineland, the annexation of Austria, and the overrunning of Czechoslovakia all took place without the European conflagration which the generals had confidently predicted. The result of these bloodless successes convinced Hitler that the generals were out of date and could only think of the defeats of 1914-18. Furthermore, he was now certain that he was a gifted supreme commander, with a matchless touch in the handling of critical military or political situations. As the soldiers did not understand the relations which existed between modern states, he only required generals who knew the technique of fighting and boldly carried out his orders.

He, therefore, gradually reduced the controls which separated him in 1934 from direct contact with the three services. War Minister Blomberg, who had made a dishonorable marriage, was removed in 1938 and not replaced, so that Hitler acquired direct charge of the *Wehrmacht*. In 1941, after a disagreement on the plans for the winter in Russia, he allowed Brauchitsch, the Supreme Commander East, to retire and took over the command himself so as to be able to direct the campaign there precisely as he wished.

It is small wonder that under such management the first thrusts of the German army groups far into Russia not only lost momentum, but also lost sight of the original object of destroying the main forces of the USSR.

After the loss of the Sixth Army in a "Kessel" about Stalingrad in January 1943, the Germans had to retreat as inevitably as Napoleon in 1812. North Africa was also cleared of Axis forces in May 1943. Then it became only a question of time before Germany was crushed to defeat between the USSR on the east and the Anglo-American armies on the west.

Thanks to the dogged fighting of the German troops, the unequal struggle continued for two more frightful years, during which time Hitler and the subservient *Wehrmacht* High Command continued to direct the war with an obstinate incompetence which has seldom been equalled.

However, apart from the abortive attempt on Hitler's life on 20 July 1944, in which only a few dozen highly placed soldiers and officials were actively concerned, the German people took no steps to put an end to the miseries from which they had suffered for so long.

On 30 April 1945, Hitler finally shot himself in the squalid bunker in the Chancellery garden at Berlin, leaving behind his last political testament to the German people. In it he blamed world Jewry for the war and named Doenitz as his successor to the Presidency of the *Reich*. He wrote, "It was never my purpose after the first unhappy world war to see a second one start against England, or worse still, against America." No other countries are mentioned. The hegemony of Europe seems to have been his aim and in his opinion to have been within his powers. Great Britain and the United States had been the ruin of his hopes.

In the last sentence, so to speak, with his dying breath, he charged the German people to observe his law of racial supremacy and mercilessly to oppose international Jewry, the poisoner of the nations of the world.

With this unrepentant epilogue he rang down the curtain on the complete chaos which ended the last act of the tragedy.

German Military Errors in 1939-45

Once more the German people fought and endured in a way which defies criticism. This time they struggled on to the last minute of the eleventh hour in accordance with Hitler's decree. Again their leaders perpetrated grave military errors so numerous that they cannot be chronicled in a short article.

Modern war is so complicated that no single man, however gifted, can hope to

direct it effectively by himself. Supreme commanders like Frederick the Great and Napoleon had become anachronisms long before Hitler tried to emulate them so disastrously. Great Britain and the United States are not military-minded nations, but their evolution of the combined chiefs of staff committee is a milestone in the history of war. Something of the kind will always be necessary. Without it, statesmen and soldiers will always be at loggerheads—like Hitler and his hated generals.

Premature Aggression

Hitler's acts of aggression were premature in that none of his three services was ready for a major war. When it started, the Navy had barely 100 submarines and could only man 30 of them. The *Luftwaffe* had been hastily put together and lacked reserves of pilots. The Army had about 98 divisions of which only 52 were really fit for war. Only 5 years had elapsed since the expansion of the Army and the creation of the *Luftwaffe* had begun. Such a short period is not enough, even for the Germans, in which to build up forces sufficient to conquer and hold Europe. Moreover, in a short time Great Britain came in, and Germany's war commitment became a long-term one. Hitler seems at least to have realized that.

One of the principles of strategy is to attack the main adversary and to limit hostilities as far as possible to the decisive theater of war. After the conquest of Poland, Norway, Denmark, the Low Countries, and France, Great Britain was left as the main enemy of Germany, not the USSR. Germany's relations with Russia were governed by the nonaggression pact of August 1939, which was Hitler's greatest political triumph and which Stalin was observing most faithfully. This pact gave Germany ample time to devote all her energies to the destruction of Great Britain. Even if Russia had been defeated, which she might have been, Great Britain would still have remained the chief adversary and would have become stronger and more difficult to defeat. Moreover, when Germany attacked the USSR she was in essence fighting on two fronts, which it had been the whole object of her strategy to avoid.

In truth Hitler, although extremely obstinate, lacked the resilient tenacity of a great leader. He was like the fighting quail of the Pathans which, when once driven out of the ring, will never re-enter it against the same bird. He turned away from failures. The Battle of Britain, for instance, seemed to sicken him both of attacking England and also of the air. This was very fortunate, since the bombing of Great Britain in the manner of Air Marshal Harris and the Bomber Command would have been devastating in our crowded island. Nor did Göring seem to study the causes of the *Luftwaffe's* failure and advise its remodeling for a further attack. So Hitler went off to the attack of Russia, put Germany's main constructional effort into army equipment, and failed to appreciate the full significance of air power. The *Luftwaffe* fell in consequence into a premature decline.

Failure to Dominate the Mediterranean

A practical plan for dealing with Great Britain would most certainly have been a long task, involving a renewed struggle for air supremacy. But it did not involve a large number of divisions. Had "settlement with Russia" been postponed, ample troops and aircraft would, therefore, have been available to assist Italy in gaining control of the Mediterranean and the Near East. In 1940-41, Egypt was very weakly held by the British and so was Malta, the key to the capture of the Near East. A proper tie-up with Italy as soon as she entered the war could have led to a victorious campaign against Egypt, instead of the spasmodic one which even-

tually cost Germany and Italy the loss of 250,000 men. Left to their own devices at first, Mussolini and the Italians hopelessly mismanaged their Mediterranean and African commitments. A great chance was thereby lost for dealing a deadly blow to Britain at the critical moment when she was facing the Axis powers singlehanded. Operational contact with Italy was so bad that her abortive attack on Greece through Albania came as a complete and disagreeable surprise to Hitler; so much so that he had to delay the opening of his difficult campaign against the USSR for an entire precious month of the summer in order to tidy up Greece and the Balkans. Here again, an authoritative inter-Axis staff committee should have co-ordinated the war effort of the Axis powers, but German co-operation with her allies remained "very imperfect" just as it had been in 1914-18.

Failure to Maintain the Objective

The original German objective in the Russian campaign was to round up the Russian armies and destroy them. No other objective could succeed in so vast a country. The three German army groups penetrated deep into the heart of Russia, but were held up for the winter short of the line Leningrad-Moscow-Rostov at the end of 1941. The only hope of success in 1942 was to deal with the main Soviet forces about Moscow and to the southwest of Moscow. If Germany was to be victorious these main forces had to be destroyed.

However, led away by purely administrative needs—the shortage of oil and grain—Hitler launched the 1942 campaign from about Charkov, southwest in the general direction of Stalingrad and the Caucasus. The main Soviet armies and the best railways still lay to the north of this deep thrust to the southwest. When this German attack lost momentum short of Stalingrad, the Caspian Sea, and the Caucasus, it was doomed. The inevitable Russian counterattack from the north started. Failure to maintain in 1942 the object which had been so nearly achieved in 1941 caused the three German army groups to fall back on their homeland in a retreat of terrible vicissitudes lasting for more than 2 years. In the words of Winston Churchill, "It tore the guts out of the German Army."

Moral and Political Failures in 1939

The pen of a future historian will some day set the long register of the crimes and follies of the Nazis into proper perspective with the well-intentioned efforts of the Weimar Republic and the vaunting ambitions of the First *Reich*. When an authoritative history of modern Germany comes to be written, it can hardly fail to show that the moral defects already apparent during the rule of the Kaiser duly appeared again with the advent of the Nazis.

The more the regime changed, the more hideous grew the same faults. Greater arrogance and more exaggerated belief in German supremacy led to even grosser overestimates of the power of Germany. Mere disappointed surprise at the respect paid to "a scrap of paper" in 1914 gave place to the Nazi practice of deliberately contracting treaties without any intention of honoring them a moment longer than it was advantageous to do so.

By the outbreak of the war, reliance could no longer be placed on the written promises of the Nazis. The "Unconditional Surrender" which resulted in such havoc to Germany in the last stages of the struggle became, therefore, almost a *sine qua non* for the extirpation of the Nazi tyranny.

Oppression, cruelty, and corruption on a scale unknown in the Kaiser's time became familiar to hundreds of thousands of German citizens, as well as to the peo-

ples of occupied countries, and debased the very name of warfare.

Corrupt themselves, the Nazis were adept in the use of bribery and subversion in their secret service war, but failed to understand that the greatest integrity is required for success in the direction of these underground activities. The German intelligence services were in the hands of too many unscrupulous men who constantly failed to produce reliable information.

Such activities as fifth columns, "tourists," and subversion in general only prosper in step with successful war. When a tide of reverses sets in they are a dead loss. The Germans in the end had every reason to regret these doubtful innovations just as they did the use of poison gas in 1914 of which they eventually got far more than they delivered. In 1939-45 they left chemical warfare severely alone.

The theory of German racial supremacy caused fatal political errors in Russia, which was seething with discontent when the German onslaught started. For instance, the Nazis repeatedly declared that Slav races in general and the peoples of the USSR in particular were "subhuman" and fit only to labor under their direction. Instead of treating their Russian prisoners with the consideration due to victims of Communist oppression, they herded them into prisoners' cages like cattle. Neglecting to play the role of liberators, they replaced the Russian commissars with German ones.

Nothing helped Stalin and the Politburo more than this faulty political approach, especially the "subhuman" motif. It enabled the Russian leaders to rouse the wild pride of all Russians in the defense of their beloved country and to banish the spiritual stagnation of defeat.

The essence of the tragedy, which has now been roughly outlined, was the apparent helplessness of the German people to avoid being saddled with the Nazi travesty of government. The great majority of German citizens cannot have approved of the brutal methods by which the Nazis gained their control of the state. However, they acquiesced in them and were accessories before the fact in all the Nazi crimes. This is probably the root cause of World War II and the German defeat.

The consequences have been terrible, not only for Germany but for Europe as well. Formerly, Germany was the bulwark of Western civilization on the eastern marches of Europe, but those once sure defenses have vanished. Western Europe is now seriously threatened by the totalitarian Communist hordes of the USSR. Germany has thus failed in her great trust and hindered the cause of humanity. The progress of civilization will not be furthered by the disciplined hordes of a police state, even if they are educated and have able leaders. The evolution of mankind, like all other kinds of natural evolution, depends on the unfolding of individuals better than their predecessors in the art of living, including the art of good government without which individuals cannot prosper.

Germany has always excelled when wrestling with adversity. Her problem today is to devise a system of government in which an aristocracy of the individual will control her affairs. In the meantime, Europe can take comfort from the fact that modern wars of aggression do not seem to end well for the aggressors.

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Air Defense Problems of a Future War

Digested by the MILITARY REVIEW from an article by Captain M. Harrison in "An Cosantoir" (Ireland) September 1952.

EXPERIENCE, and the lack of it, are the two dominant factors now determining the types of fighter aircraft needed for home defense in the future. The trends in design and performance, expressed in fighter types, differ as between the United States and Great Britain, because the needs of the two allies are based on different appreciations of the same problem. The problem is simply how best to defend the homeland—the most vital operation of all major wars—against vertical assault. The subjection of the homeland is now, as always, the major objective in war, except for the so-called "limited objective wars," because the homeland represents the reservoir—the means to fight. Subjugate the homeland and the fight is over.

Experience a Major Factor

It will immediately come to mind that the relative sizes of the two countries named will constitute a major factor in considering the problem. This factor can, in fact, be greatly played down in favor of one not so obvious, but one which is more difficult to reduce to a plain statement. It revolves around British estimation of what they can expect, based on their experience of two world wars, versus American estimates of what they can expect, based on no experience whatsoever, except the fragmentary knowledge of what the Soviets can, perhaps, do by way of attacking the American homeland.

The British know their problem in nearly all its aspects—that is, population reaction to air attack and the other considerations involved. It will be the same as previously, only more intense. The Americans do not know exactly what to expect either of the American people or of the Soviet aircraft.

Early in World War II, at the period of the Battle of Britain, for instance, the Royal Air Force's Fighter Command was controlled by, and was integrated with, radar-equipped ground organization so that its few fighters were able to cope with the great numbers of German aircraft sent over to deliver the *coup de grace* to a country which had recently witnessed the disintegration of its land forces at Dunkerque. Initially, the German pattern of assault was by bombers which were closely protected by fighters in a ratio of one to three. The superior radar intelligence of the British could so dispose its fighters as to be ready when the *Luftwaffe* showed up. This baffling accuracy forced on Göring a change in plan whereby half the usual fighter escort would protect the bombers, and the remaining fighters would battle the British fighters. At the same time, the German bomber force was reduced by half. This tactic assured to the bombers the same ratio of close escort while freeing a large number of fighters for their attack role.

By employing this new pattern, Göring succeeded in a few weeks in placing the Fighter Command in a position where its losses were greater than replacements from production. The *Me-109s* were not as good as the *Hurricanes* and *Spitfires*, but there were too many—so many that the escorted bombers frequently found their targets.

The British Concept

The British viewpoint appears to expect that an air assault will come in the form of bombers heavily escorted by fighters which must first be eliminated before the bombers can be attacked. The role

of British fighters must be that of anti-fighters primarily. The essential characteristics are better maneuverability and higher service ceiling than those of the probable enemy. That the anti-fighter exists—if only in prototype—is apparent in the *GA 5 Javelin*. This delta-wing fighter will be radar guided, powered by two of the world's most powerful engines, and will fly at supersonic speeds. Moreover, it should be able to intercept enemy aircraft before they are over British territory—an important consideration now when one bomber can destroy so much more in one sortie than squadrons could previously achieve in weeks, and when an atom bomb loosed on almost any area of Britain could do much damage, the country being so densely populated and highly industrialized.

Nothing is known of the armament intended for the *GA 5*, but if the standard is to be adhered to she will mount four cannon. It is improbable that she will mount rockets for her primary role, unless these are built into the fuselage or wings. Designed to waylay fighters under any conditions, she will cope easily with fighter bombers, be capable of attacking the best known jet bombers, and play ducks and drakes with any piston types. Her tactics may well be conventional—the swift climb to station, higher than the enemy formations, selection of target, and best route down to the kill.

The American Concept

The trend in America is different, one reason being that, so far as is known, no fighter yet developed can fly from Soviet bases as escort for attacking bombers. Worth-while targets in the United States can, therefore, be found only by bombers flying alone and, so far as information goes on Soviet long-range types, incapable of the return journey to the home base. Since there will be no fighter screen interposed between the bombers and their interceptors, the problem resolves itself into producing a fighter capable of neutralizing bombers—an anti-bomber. Now the Americans are very bomber conscious. Being the victims of their own advertising, they cannot help but attribute to Soviet bombers the wonderful capacity for performance and destruction which they have attributed to their own *B-36*. To date, the Soviets have not indicated that they have any-

The new *GA 5 Javelin* is expected to fill the anti-fighter role for Great Britain.

thing approaching the quality of the *B-36*, but they apparently *have* produced atom bombs before anyone thought they could. It follows, then, that the American anti-bomber must be capable of forestalling attacks by Soviet *B-36* types—very fast, high-altitude, self-defending carriers of atom bombs. As the Americans improve on their strategic bomber types (for instance, their *B-52* all-jet prototype), they will feel, as a consequence, that the Soviet Union may be doing likewise, aided by espionage or imported genius. The result is that no effort can be spared to improve still further America's fighter types.

Complicating the problem is a further consideration—psychological this time—and that is the civilian reaction to aerial bombing.

A fundamental of the Communist creed is the tenet that the state is all, the in-

dividual nothing. Civil defense in the Soviet Union is, as a consequence, an instrument for the protection of industry and installations rather than a device for the reduction or elimination of casualties among citizens. An industrial area of the USSR devastated by American bombers can be roped off by the MVD, the state security army; those who panic or complain can be labeled with an appropriate crime and promptly eliminated. The structure of government is such that there is no appeal to authority, no way in which the population can express its reaction.

What the American civilian reaction to a similar calamity will be is anybody's guess. The affected area could conceivably became the ground zero of a panic wave succeeded by such reaction in government as to damage seriously the war effort. Individualism in America could produce this effect, either in whole or substantial part. Isolation could very easily revive and win rapid support.

To sum up, then, mass hysteria is, in the Soviet Union, probable but controllable; in America probable.

Infallible Interceptor

These two factors, their bomber consciousness and the human element, have made it incumbent on the American Air Force to produce a fighter which will infallibly intercept and infallibly destroy enemy bombers—all of them. That the Air Force is not at all happy about this task is apparent from the various statements and articles issued recently. The kernel of these is that a very high proportion of raiders will be destroyed before damage can be done, but that inevitably, single enemy bombers will survive long enough to reach some worthwhile target.

The search for this machine is frustrating, for there is the ever present worry that, like the better mouse trap, it may fail to trap all the mice. Its essential characteristics can be defined in general terms. Service ceiling must be better than the *B-36* or its all-jet equivalent. It must be much faster so that it can reach the bombers before they appear over populated areas. It must be so armed that it can destroy the machine at which it is aimed with the first burst, for such is the speed visualized, and such the bomber defensive armament, that no second chance may occur.

A Major Question

The question now is, "Just how far have the Americans gone toward producing this anti-bomber?" The answer would appear to be reassuring. It is, however, posited in all seriousness that American aircraft policy is hindered by two factors, briefly expressed as too much money and too many geniuses.

One prototype with characteristics approximately adequate to the requirements is the *F-94C Starfire*, a mid-1952 version of the *F-80 Shooting Star*, the first American operational jet. Another such prototype is the *F-86D*, a development of the very successful *Sabre*, which is the mainstay of United States air power in Korea at present.

A description of the *F-94C* will cover the *F-86D*, since both are being tested with the same equipment and for the same role. Overlooking the conventional characteristics, this plane is abnormal in that its electronic "brain," when switched on by the pilot, flies the plane to the target irrespective of darkness, fog, or cloud, and can keep contact despite the opposing bomber's evasion tactics. At the correct time for firing, the electronics launch the rockets. This plane carries 24 rockets mounted in a ring around the plane's nose. A split-second before firing, the apertures through which they will be released open, to close again once the rockets have been launched. The advantage

of built-in rockets, as opposed to the underslung type, is that they do not produce drag on the plane, with the consequent reduction in speed and maneuverability. These rockets are the sole armament of the *F-94C*.

Here, then, is an attempt to bring into the air a punch which can be delivered infallibly and which, once delivered, will assure a kill every time. It is presumed that while under human control the *Starfire* is taken to the most advantageous station and from there the electronic "brain" is allowed to take over. Gadgets which would guide the aircraft into the powerful defensive fires of a modern bomber would not make for economy either in aircraft or human lives. Another consideration is the limitations of the conventional rocket. Much information has been released recently on projectiles which, once in the air, will home on their targets. This homing characteristic is not a feature of the air-to-air rockets employed by the *Starfire*. Further, they have a low launching velocity which makes for very short effective range when used as air-to-air weapons. Electronics notwithstanding, the aircraft must come within range of the bomber's fire to ensure hits; furthermore, a bomber can weave just at the moment the rockets are launched and thus avoid being hit mortally.

Soviet Developments

What about the Soviets? Data which accrued during World War II will give us some clues.

During that conflict, the Soviets had no strategic air force, but they remedied the deficiency quickly and cheaply by copying some American *B-29* types which had been engaged in the shuttle-bombing sorties over Germany. The Soviet *Tu-70* is, in fact, a translation, so to speak, of the *B-29*. Before the advent of the *Tu-70*, the most propagandized Soviet machine was the *Stormovik*, a hedge-hopping aircraft; little wonder, then, that the Communist authorities were impressed by American strategic bombing techniques. Very long-range, self-defending light air force machines, bombing from high altitudes, showed the power of the United States. It can be assumed that the Soviets have shrewdly assessed the capabilities of the *B-36*—the standard American atom bomber—and have oriented

The United States *F-94C Starfire* has all the prerequisites for an anti-bomber role.

their fighter policy accordingly while bearing in mind the probability of more advanced bomber types.

Their problem is to develop an anti-bomber for home defense against 600-mile-an-hour stratobombers flying in formations which give complete defensive coverage. That there is a problem at all is, of course, sheer speculation. That they were backward in the air in 1946 is no guarantee that they will be equally backward in 1956; their espionage is notably excellent and their employment of German experts is acknowledged. Further, they are prone to secrecy and such pictures and data as are available are all too few. However, indictations point to the existence of radar-equipped fighters in China.

If it be assumed that these more advanced types are *MiG-15* developments, some deduction can be made based on

knowledge of this latter aircraft. To judge from its continued appearance in large numbers in Korea and Manchuria, the *MiG* is the standard operational fighter, occupying the same relative position as the British *Meteor* and *Vampire*. Equipped with Rolls Royce *Nene* power unit, the Soviet machine has a service ceiling of 45,000 feet, which, in all probability, is sufficiently high in Soviet estimation to combat the jet-assisted American *B-36*. The Soviets are capable of producing better power units and, undoubtedly, are doing so in their usual mass-production fashion so that it must be conceded that their aircraft will be capable of effective interception.

As to armament, the *MiG-15* carries one 37-mm and two 20- or 25-mm cannon which, in action against American *Sabres*, have not distinguished themselves, because of an inadequate fire control system. It is acknowledged that the *MiG* should be better in performance, and the best reason for its deficiency appears to be the one advanced here.

The more forward-looking *MiG*, then, equipped with a radar scanner and directed to its target by a ground control organization, will fail if the target is a machine as good or better than the *Sabre*; but the *B-36* is no *Sabre* for speed and maneuverability, its published speed being 435 miles an hour. *MiG* types, therefore, should be capable anti-bombers, quite conventional in all respects and typically lacking in instruments which, of their nature, do not lend themselves to mass production.

An unconventional aspect of Soviet fighting theory, however, deserves mention since it does affect the picture of the air war. On the ground, the Soviets try to achieve a ratio of four to one in their favor. This concept of mass is also a feature of their artillery. Where they could choose time and place, the ratio was achieved both in the air and on the ground. It can be taken for granted that since they are well aware of the vital areas in their homeland, they will try to compensate for what is lacking in the individual aircraft's performance by using swarms of machines; quantity to make up for quality.

The latest anti-bomber *MiG* massed in saturation numbers on the probable invasion airways seems to be the Soviet answer to the home defense problem.

The Soviets may use an advanced model *MiG* for home defense.—*Aviation Age* photo.

Latest Weapon

Even while the effort to evolve the ideal piloted aircraft for home defense continues unrelenting, there comes creeping into the news information of other means to the same end—ground based guided missiles that will home on their targets and explode when within lethal range.

It is here that protection should be sought against the bomber, or will the bomber, too, be rendered obsolete by some atom-powered, atom-armed robot which will have spread its destruction long before its meteor-like flight can be plotted or its approach detected?

The Thirty Years War in Modern Dress

Digested by the MILITARY REVIEW from an article by Major General B. T. Wilson in "The Royal Engineers Journal" (Great Britain) September 1952.

SOME distinguished observers of the calamitous events of the cold war compare them with those which finally culminated in the disastrous struggle known as the Thirty Years War (1618-48) and suggest that a study of its history will help us to understand the trend of international events today.

Few soldiers on the active list have, however, much time for the serious reading of history, especially that of the exceedingly complicated period of Europe in the sixteenth and seventeenth centuries.

An attempt, therefore, to bring the genesis of the Thirty Years War into focus with what is happening now may be stimulating and even useful to those who have little time except for the hurly-burly of their everyday professional life.

Martin Luther started the German Reformation in 1517 by nailing to the door of the castle church at Wittenberg his famous 95 articles attacking the abuses of the Catholic religion. Almost exactly a century later at Prague, an even more picturesque incident took place, which is generally accepted as the beginning of the Thirty Years War.

In the Bohemia of those days, the commonly accepted method of expressing disapproval of unpopular public men was to push them through a window. The deputies of the aged Emperor Mathias in Prague had earned the obloquy of the Bohemians during a dispute about a church. On 23 May 1618, two of them dully made a rapid descent of 70 feet into the dry moat of the royal castle of the Hradschin. A secretary also was thrown out as an afterthought. Miraculously, none of them was killed since they chanced to land on an extensive dunghill.

The Thirty Years War chronicles many serio-comic barbarities of this kind, but this one was rather unique in that it infurated the Emperor into taking condign action against the rebellious Bohemians.

That the incubation period of the war lasted as long as a hundred years was due to the complications of the European political scene at the end of the sixteenth century, particularly in a divided Germany where no great Protestant ruler emerged to shake off the medieval shackles of the Empire and to fashion a united country with its own reformed religion.

Contemporary Europe About 1600-18

Spain, the foremost champion of the Catholic cause, was still dominant on the Continent. Her hereditary possessions included the Spanish Netherlands, the large kingdom of Naples, Austria, Lombardy, Bohemia, and Hungary, not to mention Mexico and Peru. Germany, although not part of her direct possessions, formed a large part of the Holy Roman Empire, which stretched from the Danube to the North Sea and the Baltic.

The Netherlands, whose commerce and wealth were essential to the gimcrack economic structure of Spain, had been profoundly affected by the Reformation. After more than 75 years of savage fighting, the rebelling Dutch compelled Spain to sign a 12-year truce with their new and triumphant republic. What is now Belgium, with a large stretch of country to the southwest of it, remained as the Spanish Netherlands.

The Spanish and Austrian branches of the Hapsburg family maintained a hazardous overlordship of all these various countries. Both were perpetually short of money. Only Spain had a regular army, which was never large enough for the jobs at hand.

France

France became busy in the latter half of the sixteenth century with the religious civil wars of the Huguenots, which nearly wrecked the hard-won unity of the country. The massacre of St. Bartholomew's Day took place in 1572. The Edict of Nantes, famous as the first measure of religious toleration in Europe, was issued in 1598. Soon afterward, Henri Quatre, the splendid monarch of the majestic château in the Loire Valley, was contemplating war with Spain when he was struck down by a Jesuit assassin. During the opening years of the seventeenth century, Richelieu, the cardinal-statesman, was consolidating the power of the youthful Louis XIII and settling the French religious quarrels by wise measures of toleration. By 1632, he was able to intervene powerfully in the German religious war, not to assist the Catholic cause, but in alliance with Protestants to weaken Spain and Austria, the arch enemies of France.

Sweden and Denmark

In Sweden, the first task of the youthful Gustavus Adolphus, when he came to the throne in 1611, was the expulsion of the Danish armies which had overrun his country. He then tidied up the Baltic so effectively that Russia could not launch a boat upon the bleak tideless sea without Swedish permission. Poland was another of his early military problems, since the medieval structure of the Empire gave the sovereignty of Sweden to his cousin Sigismund, the King of Poland, just as it gave Bohemia to Ferdinand II, and the Netherlands to Spain.

As the Reformation had taken early root in Sweden and Denmark, it is hardly surprising that Gustavus looked upon the Hapsburgs and the Catholic religion as a single monster with two heads, both of which it was imperative to remove.

Christian IV of Denmark had, in 1618, every cause to be anxious about the future of his country, since a united Catholic Germany would make short work of his Protestant bishoprics and his strongholds on the Weser and the Elbe. His political views about the Empire and the Catholic religion, therefore, coincided exactly with those of Gustavus Adolphus. They were, however, clouded by the rivalry between Denmark and Sweden, which made it difficult for these two seafaring neighbors to co-operate effectively.

England

England began her struggles of the Reformation rather later than Germany. Henry VIII was most English in his fondness for the sea, but just the reverse in his passion for theology, which in that age was of great political importance, just as the science of economics is today. He actually earned the proud title of "Fidei Defensor" from Pope Leo X for writing a pamphlet in refutation of Lutheranism. When he dismissed Cardinal Wolsey he proved perfectly capable of ordering the affairs of the Church of England himself.

The Reformation in England was, in fact, more a breach with Rome over the question of ecclesiastical power, than any radical change of faith. As the Pope was bound hand and foot to Spain, England inevitably became involved in war with that country, a war which outlasted even Elizabeth and Philip II and was only concluded in 1604, a year after the accession to the English and Scottish thrones of James I.

On the Eastern flank of the Empire, Hungary was sometimes at war with the Turks and sometimes in league with them against their more civilized Western neighbors. Poland was being converted by the Jesuits to the Catholic faith, which almost to the present day has differentiated that country so greatly from Russia whose religion came from Byzantium. Russia, itself, sunk in oriental barbarism and gloom, hardly impinged at all on the religious and political struggles of Europe. For nearly another hundred years,

she was to be kept fully occupied within the confines of her vast forests and wide steppes.

The Condition of Germany

Germany, on which the ferment of the Reformation worked so potently, was a strange motley of electorships, principalities, duchies, bishoprics, and small states. In all, the various dependencies of the Empire numbered more than 300. Legally, they were all vassals of the elected Emperor, whose power depended on his ability to keep some sort of order among this large conglomeration of well-fed, quarrelsome minor potentates. The General Assembly, or Diet, elected the Emperor who used it as best he could for giving shape to his policy. It never entered the heads of the splendid princes and powerful prelates of the Diet to summon to it any representatives of the common people. Ordinary men formed neither part nor parcel of the Councils of Germany and have often been excluded from them in more modern times.

As the Catholic ecclesiasts and princes of the Diet were in the majority, the Protestants could never expect from it any decisions favorable to their cause, even though at the end of the sixteenth century a very large percentage of ordinary Germans were Protestants. Like the League of Nations of 1918 and the United Nations Organization of 1945, neither the Emperor nor the Diet disposed of any standing army to carry out policy by force if peaceful methods failed. When confronted with a serious impasse, the various electors, princes, dukes, and bishops raised armies *ad hoc* and picked sides to fight it out. For this reason, Germany ultimately became the happy hunting ground of soldiers of fortune of all nationalities, most of them foreigners. They gave the Thirty Years War its particular cachet. Nearly all of them were of aristocratic origin. Even the murderers of Wallenstein, the great Bohemian soldier, were all connected.

The Reformation

It was in a divided Germany of this kind that Martin Luther, until his death in 1546, led his crusade against the abuses of the Roman religion. Although a religious genius, he was not a revolutionary, for like most men of his race he had great respect for law and order. Far from countenancing the social revolt of the downtrodden peasants of 1525, he supported the cause of the princes in a famous treatise, in spite of the fact that he himself was of peasant stock. His spiritual home was Wittenberg in Saxony, where the elector himself sheltered him from his enemies. His bold defiance of the Pope made him for some vital years a popular figure throughout Germany, especially with the middle-class inhabitants of the towns. Yet, in spite of the astounding first successes of Lutheranism, the reformers did not succeed in converting the whole of Germany, for religion in Europe has never been divorced from politics. The patchwork structure of Germany in the sixteenth century conduced to that political anarchy which has so often been the bane of Germany. No soldier statesman of German race of the caliber of Gustavus Adolphus appeared on the scene to unite the country.

Nevertheless, by 1539, the Lutheran religion was professed by the rulers and people of Saxony, Hesse, Brunswick, Brandenburg, and Prussia, as well as in many important cities in the north and south of Germany. Calvinism too was established in the Palatinate athwart the Rhine about Mainz.

This all happened without much rejoinder from the Emperor or the Catholic princes of Germany, who, if they had been so minded, could have destroyed any army which the Protestants might have put into the field. Here again, politics came into the question. In reality, neither the Catholic nor the Lutheran princes were prepared to fight under the Emperor or anyone else for the unification of Germany.

They liked their loosely co-ordinated little autocracies. If they fought at all, they did so to maintain their power or to add to it.

Even so, after a peace with France in 1544, Charles V, on one of his rare visits to the Empire, did attempt to deal with Saxony and Hesse, not because they were heretics, but because they were rebellious. His imperial army, mostly found by the Pope, defeated the Protestant generals at Mühlenberg on the Elbe in 1547. It was, however, an empty victory, since political anarchy still prevailed.

Later on, the treacherous Maurice of Saxony and the defeated Lutheran generals did not hesitate to invite the French into Alsace. The Lutherans were then able to advance on Innsbruck and caused Charles V to flee for his life over the Brenner Pass into Italy. After this debacle, he never reappeared in Germany. His brother, Ferdinand I, who succeeded him, was wiser and more tolerant than most of the Hapsburgs. He quickly perceived that to try to reconcile the rival religions by any compromise of doctrines was a hopeless task.

At the Peace of Augsburg in 1555, therefore, the religious question was settled by the ruling, *"Cuius regio, Eius religio."* which, with Latin brevity, gave the princes the right to decide how their various peoples should worship. For more than 50 years, this rough and ready edict gave an uneasy religious peace, not only to Germany, but also to Austria, Bohemia, and Hungary, where many people had also deserted the Catholic faith.

The reader should note that in its gradual conquest of the Germans, Lutheranism did not cause the kind of panic which causes men to believe that they are confronted with a system hostile to all the decencies and cherished traditions of their previous existence. On the contrary, its object was to preserve them.

Even without the formidable promptings of the Protestant reformers, the decadence of the Roman faith had not escaped the attention of ardent Catholics. The Popes and princes of the Catholic church began to mend their ways. The Council of Trent sat for 10 years in review of Catholic doctrine.

As early as 1534, a band of Catholic devotees in Paris took vows to pass their lives in true holiness. They were led by Ignatius Loyola, Francisco Xavier, and Lainez, who were soon to become famous for the foundation of the Jesuit Order.

Changes in Spiritual Outlook

The twentieth century has had ample proof of the accuracy of the belief that long-range changes in the spiritual outlook of mankind must be based on the school. In a generation, a people can, in fact, be taught almost anything, whether good or bad, true or untrue.

No religious body was quicker to enlist the power of the school than the Jesuit Order. It knew also that the world in the main is ruled by station, wealth, and intellect. The Jesuits preferred, therefore, to train the elect rather than to preach to the multitude.

Between 1557 and 1559, Jesuit schools and universities began to spring up in Austria, Bavaria, and the Rhine Valley. Both Ferdinand II, the future Emperor, and Maximilian, destined to be Duke of Bavaria, were educated at the Jesuit university of Ingolstadt in Bavaria. These two men played a prominent part on the Catholic side in the clash of religions which the growth of the Counter Reformation made inevitable.

Ferdinand II was, perhaps, more than any other single man, responsible for the spread of the war from Bohemia to almost every corner of Germany and also for its long duration. For the whole of his life, he was as much a monk as an emperor, hating the Protestants with all the fibers of his being. Before being elected Emperor, he had quickly extirpated the Prot-

estant "heretics" from his Austrian domains, while his plan to do likewise in Bohemia brought about the "defenestration" of the deputy governors in Prague, which has already been described. Maximilian, who was closely related to Ferdinand II by marriage, began also to deal roughly with "heresy" in Bavaria.

The growing militant attitude of these powerful Catholic rulers gave serious concern to the Protestant princes, who until about 1608 had not been greatly threatened. Under John George, Elector of Saxony, they now formed the Protestant Union to oppose the far stronger forces of the Catholic League which was in alliance with Spain.

When Bohemia finally revolted in 1618, Frederick, the Calvinist Elector of the Palatinate, unwisely offered himself as its new King. Seldom in history have "fools rushed in where angels feared to tread" more flagrantly than Frederick and Elizabeth his wife, the beautiful daughter of James I. Their action, although prompted by a real desire to strike a great blow for the Protestant faith, was ill conceived and unsupported by many of the Protestant princes, in particular John George.

The Palatinate was in the heart of the Rhine Valley and coveted by Maximilian, the Catholic Duke of Bavaria. With the defeat of the Elector Palatine in Bohemia, the war could no longer be localized and spread like a slow fire to almost every corner of Germany. The now almost legendary figures of Mansfield, Tilly, Wallenstein, Gustavus Adolphus, Bernhard of Saxe-Weimar, Condé, and Turenne, together with many others of less enduring fame, proceeded in turn to spread havoc and destruction from Bohemia to the Baltic and from the Meuse to the Elbe.

Western Democracy *versus* Communism

Although the princes and the soldiers of the Thirty Years War were hard men, cruel and barbarous, politics and the lust for power were not their sole ruling passions. Most of them believed profoundly in the battle which they were fighting for the Christian religion. This fact lends a certain splendor to the story of the Reformation in Germany, which is sadly lacking today in the history of the cold war of materialism.

The struggle between Western democracy and communism, that is, the cold war, is related in the main to the industrial revolution of the last century and the two world wars of this one. The industrial revolution, while adding enormously to the development of the world, bore hardly on the manual laborers who helped to achieve it. Extremes of riches and poverty in the Victorian age created a disparity of living conditions, which gave embittered reformers of the depressed classes every cause to search for dramatic remedies.

Among them was Karl Marx. In his famous works, *The Communist Manifesto* and *Das Kapital*, he propounded a new social system. Ignoring the genius of inventors and the bold enterprise of industrialists, he asserted that the value of a commodity is solely the value of the labor required for its production. The laborers, he said, produce far more than they are ever allowed to consume, so that "a surplus value" is created which, in a capitalist state, is unjustly seized by the employers. The latter are, therefore, social enemies, ripe for violent removal.

Status of the Workers

Before World War I, the political systems of the West, which also gradually took action to improve the lot of the workers, were far too well organized to be vulnerable to Marxist violence. Indeed, in the more progressive democracies, notably the United States, a man prepared to work hard with his hands came not only to live well, but also to be socially important in the community.

But to the down-trodden, poverty-stricken masses of Czarist Russia, the

doctrines of Marx had all the force of a new religion. Before the end of World War I, the Russian Revolution broke out. Kerensky's mild form of it was soon swept away by Lenin who, as the veritable god of Marxist communism, proceeded to destroy the crazy capitalist structure of Czarist Russia with all the ruthless violence advocated by Marx.

During the years between the wars, the Soviet Union was fully occupied thrashing out the details of the Communist system, which soon came to differ profoundly from that of Marx, but still required to be world-wide before it could work with even moderate efficiency. In order to bring this about, the Soviet leaders invested their communism with the sanctity of a religion, to be propagated in every possible way to the frustrated and discontented of every class all over the world.

Chester Wilmot has well shown in his *Struggle for Europe* how the allies completely defeated the Axis powers in World War II, but presented the Soviets with precisely the chance of making communism the world system, which its inefficiency requires.

Belief in communism, kept up to concert pitch with all the ingenious resources of modern police states, is now general in Eastern Europe and large tracts of Asia. Vast armaments with masses of men trained to use them enable the Soviets and their satellites to increase the tension of the cold war, which can be fanned at will into considerable rebellions anywhere on the periphery of Communist Eurasia.

Germany, once the sure bulkwark of Western Europe against the East, is divided and prostrate. The other continental nations of the West are torn by political factions and blasted by economic blizzards. Had it not been for the practical generosity of the United States and the staunchness of Great Britain, the cold war would have been already lost.

For Western Europe is at once the strategic and material object of the Soviets. They want, if possible, to secure it intact, in working order so that the mines, the great industries, the commerce, and all the rich resources of the Atlantic countries may, under obedient Quislings, be put at once to the service of communism. Even now, their fond hope seems to be that the economic strain of resisting the physical thrusts and moral pressures of communism will overwhelm the Western Citadel.

The Western democracies, who have forgotten more about the art of living than the Soviets ever knew, cannot do otherwise than arm themselves against the prospect of being overwhelmed by such a bleak and merciless tyranny.

Thus, the rival forces of communism and the Atlantic democracies glower at each other in the East and West, much as the armies of the Catholic League and the Protestants did in miniature in the Germany of 350 years ago. Right among them, the Germany of today with characteristic toughness and matchless industry goes ahead with the rebuilding of her country. "If I intended to plant an apple tree today and suddenly heard that the world was to be destroyed tomorrow, I would still plant the apple tree" (Martin Luther).

Some Resemblances

No observer, however distinguished, can truthfully say that the struggle between Western democracy and communism is in any way a historical repetition of the storm which gathered between the Reformation and the Catholic church before the outbreak of the Thirty Years War.

One was a spiritual conflict; the other is a material one. The influence of power and politics is apparent in both. Each was, or is, a prevailing anxiety of mankind. If it be permissable, however, to compare such widely differing human anxieties, some striking resemblances do present themselves. The social progress of the Western democracies can be likened to

the unregimented, haphazard advance of the Reformation in Germany. At the same time the rigid formation of the Communist system recalls the words with which Lord Acton, the Catholic historian, described the doctrine of the Counter Reformation, "It impressed on the Church the stamp of an intolerant age and perpetrated by its decrees the spirit of an austere immorality." The Inquisition in Spain and the Netherlands, the stamping out of heresy by force in Austria, Bohemia, and even Bavaria, and the ejection of Protestant priests from their livings all over Germany caused precisely the same sort of panic then as the tyranny of the Communist system does today. Nor are the Soviets backward in their long-term use of the school for the correct orientation of their youth.

As in the opening years of the seventeenth century, so now, the eyes of the world are fixed on Germany with whose future the outcome of the cold war is inextricably entwined. Foreign armies are quartered in her divided country, which has yet to settle how it is to be finally governed. If it came to real war, it is also for Germany that the contending forces of Western democracy and communism would fight.

The moral and economic struggle between the capitalist system and communism has already been going on for more than 30 years. If the long incubation period of the German religious war is any criterion, it might well take another generation before a *modus vivendi* between Western democracy and communism is arrived at.

The Lessons

When the Thirty Years War finally came to an end in 1648, at the peace of Westphalia, owing to the exhaustion of the combatants, it had in reality settled very little. It merely crystallized the religious *status quo* which had existed before the war began. It decided none of the great problems of Europe. Like the Treaty of Versailles it just rearranged the map of Europe in such a way that further war was almost inevitable. The Empire became a mere geographical term. Germany continued even more than before to be a mosaic of quarrelsome independent states, instead of emerging as a strong and united country.

If this famous war of the past has any lesson for the world today, it is surely to show the futility of compulsion for the settlement of any great clash in the beliefs of mankind. Even in 1618, those nations prospered best which in an intolerant age were more tolerant than their neighbors. In the end, men revolt against tyranny: things must come as they can.

The second lesson, which is as clear today as it was both before and after the Thirty Years War, is the crying need for the good government of Germany. The allies made great political errors in the final stages of World War II, but they at least postponed the conclusion of an immediate peace treaty with Germany. If they had not done so, it would have no doubt been as faulty as that of Westphalia in 1648 or Versailles in 1919.

In the years to come, the world may have cause to be thankful that the intransigence of the Soviets has caused such profound delays in the settlement of Europe. They may unwittingly have enlisted time on the side of peace by enabling Germany to work out gradually a sound constitution, which will interlock with those of her neighbors as part of a united Western Europe. Time is an irresistible remedy for evil passions and violent ambitions. The storms pass and reason returns. A cold war lasting for a long time may prove to be a blessing in disguise.

Army Aviation and the Future

Digested by the MILITARY REVIEW from an article by Major K. J. Oram in the "Australian Army Journal" August 1952.

ARMY aviation is a small, but highly important, part of any modern land force. Fostered by the United States Army and later by the Royal Artillery, it is to be seen now in varying quantities in all the modern armies of the world. To discuss future trends and possibilities, we must understand fully the functions and the past development of this organization.

Army aviation is not in any sense an "Army Air Force." The principles of concentration of force and economy of effort both clearly overrule any such idea. It is simply the employment, by the Army, of aircraft of such types and under such conditions as lie outside the scope of normal Air Force operations. For the Air Force to accept the responsibility for these aircraft and for the work done by them would involve decentralization of maintenance effort to localities where it would become valueless to the parent service. The reasons for this decentralization will become more apparent as we discuss the function of Army aircraft later.

British Experience

The Royal Artillery was first to appreciate the value of aircraft within the British Army, and an airborne observation post was introduced within the ranks of the gunners in 1939. This light aircraft, flown by a gunner officer, was supplementary to both the ground observer and the Air Force aircraft flying artillery reconnaissance; it is not used if a ground observation post can engage the target effectively, nor does it fly beyond the line of our forward defended localities.

So successful did this venture prove, even under conditions of enemy air superiority, that other arms and services were soon clamoring to use these aircraft on a variety of tasks other than their primary function with the guns. This was not entirely acceptable to the Royal Artillery, whose requirements utilized the aircraft to the full, and so a further stage of Army aviation was born. There is with the British field force in Korea a flight of light aircraft for the use of all arms and services, and flown by all ranks.

The Case for Army Aircraft

The modern air force, with its jet aircraft and vast mass of complex instrumentation needed to win the air battle, has met the same major problems that confront all services—lack of manpower and finance. Faced with the presence of an already powerful and ever growing Soviet Air Force, these problems are most alarming.

It may be that in World War III, should it occur, we may never see a single allied aircraft in action. If this is occasioned by our air forces achieving their plan to ensure we never see a hostile aircraft as well, then we ask nothing more from them. Indeed, they will have made a most valuable contribution to the ultimate winning of the land battle. Should the Army find a type of aircraft which, while admirably suited to operations with the Army, is of little or no value to the Air Force, either by virtue of its type or its role, then we must assume responsibility for that aircraft and operate it as we do any other form of Army transportation.

During the last war, considerable use was made of light aircraft by American and, to a lesser degree, British forces in all theaters of war. At one stage in northwest Europe the late General Patton had amassed enough "puddle jumpers" to lift 400 assault troops across the Rhine. Unfortunately for the chronicler of army aviation, a surface crossing was made, and

the armada dispersed unused. Although the first of the Army's aircraft were, to say the least, primitive, the aircraft industry has produced larger aircraft with staff-car comfort for up to six people, and still with the same ability to operate from any 200-yard-long farm paddock with a fair surface.

One of the biggest peacetime uses of such aircraft is the speedy and comfortable transport of commanders and their staffs on visits to outlying camps and training areas. No longer is it necessary to endure those bone-shaking rides along some of our not-so-well-surfaced country roads. But more important, the trip by air can be completed in a fraction of the time required by the usual vehicular transport.

Multitude of Uses

Once a light aircraft has been used on any one task, a multitude of uses will become apparent to the passenger. An unequalled timesaver in reconnaissance, it is also valuable for laying telephone wire over difficult terrain, courier duty between forward headquarters, message delivery, and casualty evacuation. Korea has shown that speedy and careful evacuation by air can save lives otherwise lost as a result of slow evacuation in the difficult terrain. It will correspondingly lessen the strain on the medical services by reducing the number of intermediate posts needed for evacuation.

All these uses lead to the main reason for a "light" aircraft for this work. Aircraft designed for the private owner or for "light" military purposes all have one major feature in common—the ability to operate from a relatively small space in safety. In fact, they need never even see an airfield. The current specification for most of these machines requires an ability to land over and take off over a 50-foot obstacle in a distance of 250 yards from a standing start in conditions of no wind. Our light aircraft can, therefore, operate from a normal paddock alongside the regimental headquarters it is serving to minimize any delay in becoming airborne and to keep the pilot fully up to date with the tactical situation. Other light aircraft can operate from similar fields at divisional and brigade headquarters, while carrying commanders on visits and reconnaissance. Elsewhere patients may be evacuated from advance dressing stations or regimental aid posts directly to a base hospital in some reasonable degree of comfort and with speed unparalleled on land.

It will become apparent that these aircraft, like the jeep, must always be on hand in the area of the headquarters or unit served. They will fly from one unit to another, in and out of small strips cut from the bush or made by closing a section of road. The maintenance of these aircraft must be done on these strips, and since no large aircraft can use the same landing areas, this effort becomes one specially allotted to light aircraft. Since a modern air force has no use for aircraft of this type, and cannot make use of maintenance facilities dispersed in such a fashion, it is only reasonable for the Army to be prepared to accept the responsibility for maintenance, and so, ultimately, become a fully independent Army organization.

Review of Fixed-Wing Aircraft

To gain further ideas on the use of these aircraft, we must examine them in some detail and be prepared for future improvements. The following is a brief summary of two types of equipment available at the moment of writing, but it must be remembered that an up-to-date knowledge of these aircraft can only be maintained by a continual study of the subject.

The present air observation post aircraft of the British Army is the Auster *Mk. 6*. This aircraft, in a later version, the *Mk. 7*, can be converted readily from

operational fittings to a dual-control trainer, and has a good small-field performance. The aircraft carries a pilot and assorted combinations of passenger, radio, camera, stretcher, and small freight load for a range of about 300 miles. It is not equipped with full blind-flying or navigational instruments, and provides rather cramped accommodation for long-distance travel. Failing the availability of dollars to purchase United States aircraft, it is the best machine for this work at present.

Air observation post duties place a premium upon the ability to operate from small fields, and, as a result, refinements for long-distance flying and the carriage of passengers are not part of the machine's characteristics. If we are to cope satisfactorily with the long distances involved in liaison flights in Australia, and be able to carry passengers in some degree of comfort, a more substantial aircraft must be employed.

The logical contender for this type of work is the De Havilland *Beaver*. This machine is bigger, heavier, and more comfortable than the Auster, yet it is capable of operating from fields of almost the same size. In a variety of cabin fittings, it can seat up to six passengers, or carry a payload of some 2,000 pounds, including items as bulky as 44-gallon drums. Here we have comfortable cruising at 150 miles an hour, with full blind-flying instruments and radio navigation aids, over distances of up to 1,000 miles nonstop. In recent open competition against all American manufacturers, this machine secured contracts from both the United States Air Force and the United States Army. Originally designed for the bush operator of northern Canada, the aircraft operates safely and efficiently on a minimum of maintenance, and is already proving its worth in Korea.

Both the Auster and the *Beaver* are noted for the simplicity of their maintenance, and this feature will be examined later in this article.

There are other aircraft similar to both the Auster and the *Beaver* in current production today, but, as we are concerned with gaining a general impression of the characteristics, this review has been restricted to the best performers in their class only. To replace the Auster with a better aircraft would mean the purchase of an American machine, and to replace the *Beaver* with a better machine is, at present, almost impossible.

The Helicopter

In reviewing both the aforementioned aircraft, it has been possible to draw to some extent on practical experience by Army pilots, not only of these aircraft, but of other possible contenders in these two fields. However, in now turning to the rotary-wing field, we must confine ourselves to the study of type classification and not specific aircraft, since no great experience is readily available in this country as yet.

Current helicopter design ranges from the one- or two-man "observation" unit, through the two- to four-seat class, to the load-carrying category capable of lifting a platoon or light gun. Prototypes of designs capable of lifting and carrying a light tank have already begun flying.

The lightest helicopters under development are of the Hiller *Hornet* and the Saunders Roe *Skeeter*. These aircraft would augment and may ultimately replace the Auster in its air observation post role. They also provide a valuable airborne "jeep" for commanders at all levels.

To meet the duties of the *Beaver* fixed-wing class and some of the Auster uses, it would be necessary to employ larger helicopters such as the Bristol *Type 171*, or Westland *S-51*. Here we find accommodation for reconnaissance and communications, as well as casualty evacuation,

although neither machines have, as yet, the speed, load capacity, range, or ruggedness of the *Beaver*.

The heavyweights of the helicopter team are represented by the Piasecki *HRP-1* and Westland *S-55*. In these we meet aircraft capable of load carrying nearly up to that of the 3-ton truck, and accordingly of being used as such. It may confidently be expected that these "payloads" will comfortably be exceeded by prototypes to fly in the near future.

Helicopter Operations

To ensure we understand fully the potential of the rotary-wing load carrier as an Army vehicle, let us examine two cases:

Case 1—The Dumping Program

In this very common problem, a little simple mathematics will show how the helicopter eases the difficulties facing the Q staff. Using 100 Piasecki *H-21*-type helicopters, and allowing for only 75 percent serviceability, it is possible to maintain a steady flow of supplies at 134 tons each hour over a 35-mile radius, or 69 tons each hour over a 60-mile radius.

For a short period with 100 percent serviceability these figures would rise to 200 tons each hour over a 35-mile radius. This delivery by ground would involve approximately 240 trucks of 2½-ton load capacity. However, it is not in numbers alone that the comparison is interesting. Over a 60-mile route, deliveries would begin some 3 hours earlier and there would be *no road space problem*. In other words, the supply helicopters are simply loaded and dispatched along broad, predetermined bands, and no traffic control is needed. There are no defiles or crossing delays. The machines are camouflaged and fly low with no road to draw the attention of hostile aircraft, and certainly would be immune to long-range harassing fire.

With the modern design and its slow flying characteristics, the helicopter can operate in very poor flying weather, and even then at speeds considerably in excess of road traffic.

Case 2—The Amphibious Assault

Now it is no longer a "must" to establish the initial beachhead on the coast. Using helicopters in quantity, it becomes relatively simple to place assault troops on the most suitable objective and develop operations from there. All troops can be landed in battle formation and heavy equipment brought in speedily. Gone are the days of the unsatisfactory "area landing" by parachute and glider—a real concentration of force is achieved with the helicopter. As already mentioned, the helicopter is an ideal medium for urgent casualty evacuation.

The Present Position

Already, officers of the Royal Australian Artillery are being trained as airborne observers by Army instructors. This year has seen the beginning of training for liaison pilots by aero clubs throughout the country. At the moment, the only aircraft available are Auster *Mk. 3s* of the Royal Australian Air Force, which form the air observation post flight at Canberra.

It is here we meet the first difficulties in forming a really efficient Army light aviation organization. First, the aircraft are few and obsolete. In addition, most were in use during the last war and have reached a stage of temperamental, if not unreliable, operation. Second, all the aircraft are still owned, controlled, and maintained by another service. This does not simplify their operation.

Problems Involved

The problems that confront us for the immediate future are, therefore, the following:

1. Procurement of new aircraft.
2. Further training of aircrews.
3. Assuming full control over all activities of the aircraft.
4. Provision of maintenance personnel and facilities.
5. Organization of units to ensure continued training of all personnel and cooperation with all units concerned.

It should be clear to all that if these problems are to be overcome and the units to function in time for the next war, action should be taken to establish the organization now. Should we find ourselves without suitable aircraft at the outbreak of hostilities, then we shall have little chance of obtaining them for several years. The rest of the training all hinges upon the aircraft. Unlike gun drill, you cannot learn to fly or maintain a plane by running round a row of stones on the ground. The remainder of this article is devoted to suggestions for overcoming the problem of this specialist training and operation within our own service.

The Future

The procurement of new aircraft is a very urgent problem and not quite as simple as it may seem. As has already been stated, the limited number of aircraft available for training at present are too old to be regarded as satisfactory, and, if confidence is to be gained in this branch of Army activity, reliability is of great importance. In most items of equi ment we are able to follow directly the lead of Great Britain with most satisfactory results.

However, in the sphere of light aircraft we are faced with the vital problem of distance, and an inherent lack of range in the aircraft in use with the British forces. Almost all British aircraft of this type are designed with an eye on the civil market in the United Kingdom and Europe, where distances are small by our standards. The results for Australian military purposes are not exactly satisfactory.

The equipment in use in this country at present is the Auster *Mk. 3*. Let us imagine ourselves with one of these aircraft at Canberra, faced with a request to fly with a Citizen Military Force unit in Brisbane. To reach Brisbane will involve the use of the auxiliary fuel tank, and, if we are wise enough to plan a reserve for possible adverse winds, will involve a flight plan of four stages:

Route	Statute air miles
Canberra—Sydney	141
Sydney—Old Bar	151
Old Bar—South Grafton	147
South Grafton—Brisbane	150

With full fuel tanks in this aircraft, we have the choice of a passenger *or* a radio set after personal baggage has been loaded. So if the radio is needed, as it surely will be, the usual mechanic for ground crew duty must preceed us by other means. Even the Auster *Mk. 6* would only reduce this staging to three legs, and much time is still lost in ground stops.

It becomes obvious now that with these aircraft it is not possible to travel interstate in Australia with the freedom of movement associated with air travel by an airline. If we wish to overcome this failing, we must be prepared to make our own evaluation of the aircraft offering to decide upon the machine to be used. The range problem is not insurmountable. In the United States, where distances are comparable with this country, there are at least two types of light service aircraft which could fly Canberra to Brisbane nonstop.

If we are wise, this problem should not be dismissed lightly. Such a flight as described has already been undertaken, and even the short and regular trips from Canberra to the field firing range at Singleton necessitate a refueling stop at Sydney with our present aircraft.

If we decide that one type of machine

only will be employed, then we must ensure that it will adequately perform *all* the tasks ever asked of any light aircraft with the Army in the field. To do this there is only one aircraft available at present—the *Beaver*, the same aircraft now serving with the United States Air Force and United States Army in Korea. It is considerably more expensive than the Auster, machine for machine, but if Austers are to be employed we will need not only the *Mk. 6* or *Mk. 7* for normal training and air observation post duties, but will also require a different machine for casualty evacuation and small load carrying. These duties are met by the Auster *B4 Ambulance/Freighter*, which is undergoing trials at present and has not been fully proved by the services. That it will meet the Army's needs in this regard seems most likely, but we are still faced with the difficulty of operating two aircraft types against the *Beaver's* one.

A further factor in favor of the *Beaver* is that it is suitable as a basic trainer, and our pilots can be taught to fly on their operational aircraft. It is the opinion of the writer and most other service-trained pilots that the Auster does not present the most suitable characteristics for a basic trainer if other types are to be flown by the pilot at a later date. Many a private pilot has been killed by trying to do something with a more exacting aircraft than his Auster has allowed him to do safely in the past.

As a suggestion, why should not the Army purchase one or two *Beavers* and put them through evaluation trials under local conditions? These trials could be conducted very effectively by the research and development unit of the Royal Australian Air Force with a couple of the Army's flying instructors attached to aid in the project and to ensure that the trials covered all the Army's requirements.

Finally, on the subject of purchasing aircraft, when a type has been decided, the agent for that aircraft should be consulted to ensure that the initial order covers sufficient essential operating spare parts to keep the aircraft functioning while our Q service builds up the parts supply channel.

Pilot Training

The next problem to face is that of training our pilots. It is on this subject that our present system can be subjected to some criticism.

The air observation post course involves basic flying training organized by the Royal Australian Air Force at the Army's request, but with a civilian aero club. The result to date has been that one club has completed training of one course without ever seeing a syllabus for flying or theory training of the students. If the training of Army personnel is to be undertaken by a civil organization, there is no need for the Air Force to have any part in it at all, if for no other reason than to eliminate a link in the chain.

Similarly, our light aviation pilots are to be aero club trained up to "A" license standard. At this stage, they will be reasonably competent at operating their aircraft from the local airfield of about half a mile square. They will have received no special training in small field operations, restricted take-offs and landings, or crowded approaches—exacting maneuvers forming a large part of their operational flying.

We are, therefore, faced with the problem of effective training in a highly specialized art. The answer is already available to us in the technique of the Royal Air Force basic training units in the United Kingdom. There, a civil firm provides the organization for maintenance and administration, while Royal Air Force instructors train the students.

There are several large firms in Aus-

tralia which could readily duplicate this very satisfactory method of training. The suggested project would involve the establishment of a training school by the firm concerned. This would include instructional and maintenance staffs as well as administrative personnel. The training unit so formed would be commanded by an Army officer with as many Army instructors added to the staff as the Army saw fit to employ there. The training aircraft would be provided by the firm and the operational machines by the Army. All aircraft would be maintained by the firm. By such means, the Army's requirements are always kept in view by the commanding officer and the training directed to that end. Army enlisted personnel could be posted to the unit and detached to the firm to be taught aircraft maintenance so that in due course all light aviation units would be self-contained, only requiring a visit to the factories for major overhauls. This method of civil contract not only meets all our aircrew requirements satisfactorily, but also provides an immediate training organization later producing maintenance personnel from normal Army troops. It would be possible to develop this theme in great detail, but sufficient has been said already to show how simple and effective it would be in practice.

By the civil contract method, we produce aircrews and ground staffs and assume full operational control over our own aircraft, thus overcoming the remaining problems in Army aviation. This alone should make it the ideal solution to all aspects of this new weapon of war.

The Objections

In the past there have been, and, unfortunately, still are, some objectors to the Army taking its own aircraft into service. Sometimes these objections have been voiced by the Air Force, feeling we were about to launch ourselves into their domain. Other objections along similar lines have come from within our own service.

The first is that we have a complete service of experts in aviation in the Air Force and we should not attempt to handle anything that they could do. At first sight this seems a reasonable attitude, but nothing could be more false or misleading. The reader will have realized by now that we are not attempting to steal any of the Air Force's thunder, but simply to introduce into our own service aircraft of a type, and on special duties, which are quite foreign to any air force. There can be no argument that the Army *must* operate these aircraft whether they be fixed or rotary wing. The Army managed to operate its own small ships unit, and the Air Force handles its own vehicle transport without assistance from another service. In the case of the Royal Air Force Regiment, the complete ground defenses of an airfield are often entirely in Air Force hands. It is purely *a question of operational control.* As Mr. Winston Churchill pointed out in 1936, when the then Fleet Air Arm was first formed, it is of no importance at all whether the aircraft has wheels, floats, or skids; whether the weapon has wings, wheels, or tracks—it is its function that is the governing principle in its operational control.

Control Policies

If this operational control is to be effective, then the same service must have control of the training and organization of the personnel and units concerned. In addition, it must have complete freedom in the procurement of its own equipment. The British Army has already had one sad lesson in the realm of design and development. No one can deny that the Royal Air Force is the finest air force in the world, but during the years of World War II, the Air Ministry and Ministry of Supply developed the famed *Spitfire* to the *Mark 24*—the

acme of single-seat propeller-driven fighters. In the same period, the same authorities developed air observation post aircraft to the Auster *Mk. 4*—only very little better than the original Taylorcraft prototype, and hampered by all manner of requirements that were quite useless for its Army role.

Possibly the clearest pointer comes from the largest user of army aircraft, the United States. On the formation of the United States Air Force as a separate service, the power to issue specifications and contracts for Army aircraft through the Air Matériel Command was retained by the United States Army, and it now receives aircraft designed and built specifically for its use.

Obviously, the Australian Army is not in a position at present to issue detailed specifications for its future aircraft. However, there is a sound aircraft industry in this country, and, provided we are clear on the role we want filled and the over-all restrictions on the machine, the technical assistance will be readily forthcoming.

Another Objection

The other major objection to assuming absolute command over our own aircraft comes from those who point out that this method has not yet been fully employed in the United Kingdom, and we have little, if any, precedent to guide us. In answer to this criticism, it is sufficient to say we did not have much in the way of precedent when our troops first faced the jungles of New Guinea, but we managed to acquit ourselves creditably. If we tackle the development of Army aviation in peacetime we shall have a really effective organization functioning to meet the threat of any future war.

Maintenance and Organization

Earlier in this article it has been pointed out how civil resources can do the initial maintenance of Army aircraft. It now remains to assure anyone still in doubt that the ordinary soldier can be trained to maintain an aircraft.

For some years now, the general attitude toward maintenance of aircraft has been one of mysticism, and no one was ever considered capable in this sphere unless he (or she) wore an Air Force uniform. Yet, strangely enough, the Air Force ground staff come from the same community as do the ordinary rank and file of the Army.

The Royal Australian Navy can prove the point. Within recent experience, we have seen servicing of combat aircraft by Navy crews, of which any air force would be duly proud. On one occasion a *Sea Fury* fighter aircraft was completely rebuilt while the carrier *Sydney* was en route from the United Kingdom to Australia. More recently, an aircraft badly damaged in a barrier accident on landing was repaired overnight, while the carrier was at sea, and flown the next morning.

Surely then, there can be no doubt of the ability of the Australian Regular Army to operate and service machines which, among other features, are designed for ease of maintenance.

The final aspect of this new army weapon is that of organization. It is most desirable that we begin operations at the earliest and yet be able to expand as the occasion arises. To this end an air headquarters unit, such as an Army aviation wing, could be raised.

Initially, this would be very closely integrated with the civil firm responsible for training, the commanding officer of the training unit being the commanding officer of the wing. As pilots became available, the air observation post and communications squadrons would be raised at part strength. Later, when the first ground crew graduated from the civil factory, the maintenance squadron would come into being. If suitable helicopters became available, then flights could be added to the fixed-wing squadrons until

there were sufficient to warrant raising separate squadrons.

The complete wing would be established at the same airfield as the training unit, and if this were carefully selected initially in conjunction with the civil firm, it is probable that one of the ex-service fields would serve and provide at least a limited amount of accommodation for equipment and personnel immediately.

This organization would allow detached flights or sections with ground crews to join units in the field for camp or exercise periods and provide air transportation for commanders and their staffs all over the Commonwealth.

In its complete form the wing would also allow for the taking into service of any type of aircraft not used by the Air Force and not yet considered by the Army. It may be that in the near future there will arise a definite Army requirement for aircraft of the small transport type, such as the Australian *Drover*, or the American *Raider*, which is already replacing the glider in airborne assault formations.

Conclusion

Although necessarily brief, this article has suggested one method to place Army aviation on a better footing and to prepare it for the future.

The action needed for both present and future is quite clear and simple:

1. Purchase of suitable aircraft by the Army.

2. Contracting with a suitable civil firm to undertake training of aircrews, ground staffs, and the maintenance of aircraft.

3. Raising of an Army unit to provide over-all control. This last item is particularly important, since the whole organization is better commanded by a pilot, or preferably a flying instructor, than by any other officer.

Within these few pages has been discussed a unit that will become so much part of our Army in the next 5 years that we will then wonder how we ever functioned without our fleet of "airborne jeeps."

Finally, a plea to those to whom this idea appeals, do not let it stop at this, but continue to think of new uses for Army aircraft. Next time you are on a TEWT (tactical exercise without troops) just give the problem a little thought in the light of sufficient helicopters to land troops right on their objective, the use of a small aircraft for reconnaissance, the ease of laying wire from the air, and the speedy movement of commanders to neighboring headquarters.

The helicopter as a transportation vehicle for ground forces has almost universal application. The same machines used in beach landings and river crossings can be used in arctic as well as desert conditions and will soon be equally effective in mountainous terrain. The field army which is equipped with an adequate helicopter force can maintain its attack in areas and under conditions which presently stall even the most determined offensive.

Major General Frank A. Heileman

The Sea Flank Was Open

Lost Opportunities of Amphibious Warfare

Digested by the MILITARY REVIEW from an article by Major W. R. Sendall in "The Navy" (Great Britain) June 1952.

SOME 9 years have now passed since the invasion of Sicily on 10 July 1943 touched off the series of amphibious operations by which the Nazi fortress of Europe was stormed. In the interval, we have had a number of authoritative accounts of these great operations of war from both sides of the battle front. No campaigns in history have ever before been so well documented from the historical point of view. It is now possible to weigh the balance of success and failure, of opportunities taken and missed, with an eye to the future.

'Tactical' Amphibious Landings

In making this assessment there is one important fact that must be taken into account. In the entire period from the Sicily assault to the end of the war, there is a curious shortage of what may be called "tactical" amphibious operations. Despite the elaborate development of combined operations technique, there is a singular absence of confidence in using freedom of movement by sea to expedite the course of land fighting.

We have the immense, carefully planned and prepared landings in Sicily, Italy, and Normandy, and the smaller but still large-scale operations at Anzio and in the south of France. These all occupied long weeks of preparation and planning. In the case of Normandy, the period of planning and preparations ran into years.

All these great operations were successful except Anzio, the results of which fell far short of expectations. It is significant that the Anzio operation was the closest in conception to what I have described as "tactical" amphibious operations. What is surprising is the absence of smaller landings, by which the sea flank is used to gain freedom for maneuver during the course of a land battle. Such operations do not call for the monumental planning of the major, large-scale undertakings. It is essential that they should be mounted and executed quickly in order to take advantage of what may be a transient tactical opportunity. Although they demand less material, they require greater skill and confidence in the use of the sea than the big shows.

The Italian campaign was fought in a narrow peninsula with long sea flanks manifestly vulnerable to amphibious action by the powers which dominated the sea. One might have expected an entire series of small-scale outflanking operations, using the sea as a way round the enemy's fortified lines. These need not have been expensive, ambitious efforts. They could have been within the scope of the troops available, the highly trained Royal Marine and Army Commandos.

Apart from Anzio there was only one such effort, the Commando landings at Termoli, where a force seized this small Adriatic port to assist the Eighth Army to force the line of the Biferno River. The Commandos used the sea flank to get behind the enemy, to take important road junctions and bridges in addition to the harbor, in conjunction with a frontal attack on the river line. This operation is a perfect example of a "tactical" amphibious operation. It was essentially subordinate to the land battle. The sea was used to gain room for an outflanking operation to pry the enemy out of a strong defensive position. It required only a small

but highly specialized force and comparatively few craft. Moreover, it was successful.

Significant Part in Strategy

The Anzio landings were a much more ambitious conception, but the boldness of the design was not matched by the execution. Nevertheless, this operation played a significant part in the grand strategic design by drawing in German reserves which could have been usefully employed elsewhere. The fact remains that, once an amphibious operation exceeds small dimensions, a certain rigidity is imposed by the problems of supply which can only be overcome by the possession of a greater reserve of shipping than was ever available. This alone makes it more surprising that smaller attempts were not made.

Instead, the highly specialized Commando troops were more often employed in the line of battle to perform the functions of infantry battalions which they were not properly equipped to carry out. Not until the close of the Italian campaign did the Commandos have a further chance in something like their proper role, then on the inland waters of Lake Comacchio. This was a turning movement on a water-protected flank which was in many ways more difficult and dangerous than a sea-borne operation. The lagoon waters of Comacchio were rich in mud and were infinitely harder to negotiate than any normal combination of beach and cliff. This awkward operation was successfully accomplished. The achievement makes even more mysterious the failure to use the sea at earlier stages to turn the Italian river lines.

Failure to Use the Sea Flank

When we turn from Italy to consider events subsequent to the Normandy assault in June 1944, once again one is faced by a similar failure to use the sea flank tactically. It is true that the heavily fortified coast line from Le Havre to the Zuider Zee presented a formidable deterrent to small-scale landings. It is equally true that the sea flank was exploited by the allies with remarkable success by ingenious maintenance of the nonexistent threat of a landing in force in the Pas de Calais. Thus, the enemy was totally deceived into the belief that the Normandy assault was a diversion, not the main effort. An entire German army group was tied down uselessly behind the most massive defenses of the Atlantic Wall until the climax of the Normandy battle was reached. This enormous deception is a most remarkable tribute to the flexibility of amphibious power.

Nevertheless, neither this achievement nor the real strength of the Channel coast defenses are complete justification for totally abandoning the possibility of further amphibious attacks after the assault phase in Normandy was completed. Yet this was done. The highly trained Commando brigades were committed to the land battle in which their special characteristics were largely wasted.

Possibilities Overlooked

No doubt it was right to decide that a small-scale amphibious attack would be impossible by itself against the massive defenses between Le Havre and Antwerp. What were overlooked were the possibilities of amphibious attack in conjunction with attack from the land and within range of supporting artillery on the land. Immediately after the break-out in Normandy, such operations, in which sea-borne attack could be closely integrated with land attack, became possible. Indeed, more than the opportunity, the necessity for them, arose.

It is evident now that a swiftly mounted landing operation close to Brest, timed to coincide with the rapid drive of General Patton's armored columns into Brittany,

would not only have been a justifiable risk but might have secured that important deep-water port at a time when it would have been of use. In fact, Brest was not available as a port until a time when it had become almost valueless to the allied armies far away in Belgium and Alsace.

However, the greatest opportunity of all was offered at Antwerp. On 4 September 1944, the great port of Antwerp, with its potential intake of 40,000 tons a day, fell intact before the dash and thrust of the British 11th Armored Division. Because the mined and fortified approaches up the Scheldt could not be cleared, the port was useless to the allied armies until the end of November. It cost the Canadian Army a long and bloody battle to clear the Breskens pocket south of the Scheldt Estuary. It required a formidable amphibious operation by the 4th Commando Brigade to destroy the great batteries on the island of Walcheren which dominated the estuary from the north. Only then could the minesweepers clear the channel up to Antwerp.

Yet Mr. Chester Wilmot, in his book *The Struggle for Europe*, gives this considered opinion:

> Immediately after the capture of Antwerp, while the disorganized Fifteenth German Army was struggling to escape from Flanders, an amphibious force could have been landed at the mouth of the Scheldt without great difficulty. The two German divisions, which had been holding the sector of the Atlantic Wall, had been sent south to check the British advance leaving only a meager garrison in the coast defenses. At SHAEF, however, no provision had been made for taking advantage of such an opportunity. All the planning had been based on the assumption that any ports or pockets of resistance on the Channel coast would be taken from landward and no amphibious reserve had been kept in mind to exploit the allied command of the sea.

In fact, the 4th Commando Brigade had to be withdrawn from the land battle to which it had been committed, reorganized, and retrained before the assault on the Westkapelle dike in Walcheren could be carried out. As everyone knows, this assault was completely successful and, considering the strength of the fortifications, by no means unduly costly. If it could have been executed early in September, when the German morale was at its lowest, it could not have been more difficult than it proved 2 months later.

Indeed, the risks must have been smaller. The landing on the dike was carried out in adverse weather. November in the Channel is no time for amphibious attacks. Conditions in September would have been infinitely more favorable.

This chance was lost because the allied command could not rid itself of the obsession that combined operations had to be huge set-pieces, because the planners at no time were able to think in terms of the "tactical" use of the sea flank. If it had been taken, the war could have been ended in 1944 with all the economy of life and political advantage that would have flowed from the earlier victory.

Oceans are indeed formidable barriers, but to the nation enjoying naval superiority in war, they become highways for carrying the attack to the enemy.

Admiral William M. Fechteler

BOOKS OF INTEREST TO THE MILITARY READER

KOREAN TALES. By Lt. Col. Melvin B. Voorhees. 209 Pages. Simon & Schuster, New York. $3.00.

By LT COL DONALD L. DURFEE, *Inf*

Admittedly part fictional and part factual, this book is one of the most controversial, opinionated, and outspoken yet published about Korea.

After gathering his facts, Colonel Voorhees has expressed his own opinions about them very openly, and often unflatteringly. He criticizes General MacArthur severely both as to purely military decisions and for his premature disclosures of information to the press. Other top commanders are not treated so harshly, and the author generally is favorably disposed toward them, and toward the Army.

Throughout the book, the press is severely attacked for its breaches of military security and the methods used to circumvent censorship. The author attempts to point out how premature press releases caused loss of life among United Nations troops in Korea. Many of those correspondents who tried to stay within the spirit of "voluntary censorship" found themselves "scooped" by the unscrupulous ones. Colonel Voorhees includes, however, a long list of correspondents who did very fine jobs in Korea.

Korean Tales is well written and very readable, whether the reader agrees with the author's opinions or not. Colonel Voorhees, a former newsman, knows how to present a subject in an easy style and in such a way that he readily captures the reader's interest.

THE NEW DICTIONARY OF AMERICAN HISTORY. By Michael Martin and Leonard Gelber. 695 Pages. Philosophical Library, New York. $10.00.

By CAPT RICHARD H. HANSEN, *Arty*

The New Dictionary of American History has successfully consolidated in one volume more than 4,000 articles, alphabetically arranged, which cover the materials of American history.

The authors have complied the entire scope of American history from the early colonial period to mid-1952. Although they covered the conventional political and military events of the United States, the authors have been careful to include the significant developments in economics, finance and banking, labor relations, constitutional and administrative law, social security, literature, science, commerce, international relations, foreign policy, education, and the arts.

The volume contains approximately 1,300 biographies which have available the vital statistics, training, and contributions of those men and women who have done most to shape the American culture.

The New Dictionary of American History, encyclopedic in scope, would be a good reference book for every soldier, teacher, scholar, and layman.

OVER A BAMBOO FENCE. By Margery Finn Brown. 239 Pages. William Morrow and Co., New York. $3.50.

THE FACE OF SPAIN. By Gerald Brenan. 310 Pages. Pellegrini & Cudahy, New York. $3.75.

CANADA'S CENTURY. By D. M. Lebourdais. 214 Pages. Frederick A. Praeger, Inc., New York. $4.50.

By MAJ PAUL F. WACHHOLZ, *Arty*

The optimistic assertion that the twentieth century is Canada's is based on the supposition that she possesses the *material* requirements for greatness: minerals in unequalled quantity and variety; hydroelectric power, coal, petroleum and natural gas; timber for lumber, pulp, and products of wood chemistry; ample food; splendid waterways and harbors; and an unexcelled geographical position.

By concentrating his attention on its lesser-known parts, principally northern Canada, the author develops the thesis that the region of the Laurentian Shield possesses the mineral and energy potential requisite to a great modern industrial economy; that the Prairie Provinces, when made accessible to Canadian and world markets by adequate rail and waterway systems, will furnish the food necessary for a greatly increased population and industrial system; that the development of the St. Lawrence waterway, the Hudson Bay route, the Pacific harbor and hinterland of Prince Rupert, the Mackenzie Valley route to Alaska and Asia, to parallel and supplement the Alaska Highway, and the polar air routes, coupled with her other material assets do give Canada fair hope to realize her destiny of greatness in our century.

Mr. Lebourdais finally poses the unanswered question, "Will Canada, which invites capital from wherever it may come, also be successful in attracting the immigrants to satisfy its most obvious lack—people?"

Though this is a readable, interesting, and at times fascinating description of our important and friendly neighbor, much of its value is lost upon the reader who is unfamiliar with Canadian geography. The book could have been improved by a greater number of maps and sketches.

UNDERGROUND: The Story of a People. By Joseph Tenenbaum. 532 Pages. Philosophical Library, New York. $4.50.

By LT COL JAY W. HERRINGTON, *Inf*

This book is an impressive indictment of the anti-Semitic Nazi forces rampant in Eastern Europe during World War II. Dr. Tenenbaum's factual recital of the ruthless extermination of 3½ million Jews in Poland creates for the reader a gruesome picture of unrelieved human suffering under the insensible brutality of the Nazi regimé.

The narrative begins with a brief history of Polish Jewry prior to the German-Soviet partition of Poland, and continues through World War II. The major portions of the book are devoted to a detailed description of the actual fighting between the Jewish underground forces and the Nazi troops in the major cities of Poland. The author describes postwar conditions in Poland at the time of his visit in 1946. No attempt has been made to portray conditions under the present Communist regimé.

The chief interest for the military reader of this work is found in Part Six, where the author discusses the heretofore little-publicized Jewish partisan movement. Many examples are cited of guerrilla action, carried out from bases located in the Prypet Marshes along the borderland of Poland as well as detailed accounts of partisan resistance in the ghettos of Warsaw and Cracow. Unfortunately, the author limits the scope of his material to those actions involving the Jewish population and the reader fails to grasp the over-all picture of the East European partisan movement.

THE POLITICAL COLLAPSE OF EUROPE. By Hajo Holborn. 207 Pages. Alfred A. Knopf, New York. $2.50.

NELSON'S CAPTAINS. By Ludovic Kennedy. 386 Pages. Illustrated. W. W. Norton & Co., New York. $5.00.

ECONOMIC MOBILIZATION AND STABILIZATION. By Lester V. Chandler and Donald H. Wallace. 610 Pages. Henry Holt and Company, New York. $4.50.

By LT COL GEORGE E. LARSEN, *QMC*

The paramount task currently presenting itself to the American people is that of trying to prevent a third world war, and, at the same time, preparing for war in the event it should come. A substantial defense program for the next several years seems to be a minimum requirement. And all, in devoting themselves to this task, must realize that the double economic problems of mobilizing large amounts of our resources for war or defense, and of preventing the inflation that threatens to accompany the mobilization process, readily come to the front.

The authors have taken what they considered to be the best materials treating problems of economic mobilization and stabilization and presented them with a systematic development and continuity comparable with a textbook of college or university level. Breadth and concreteness have been promoted by drawing heavily on actual experience in World War II and by the use of articles and reports written by men who participated actively in the programs about which they write. One readily sees that a comprehensive and well-rounded treatment of the political economy of war and defense is given but not that alone. Materials that present also the social, political, and administrative factors that affect the form and nature of the problems are presented, for all must be considered in a formulation of policies.

Part I of the book gives an explanation of the basic economic problems of war and defense programs, describes the types of economic adjustment required, and presents a general statement of economic controls needed in a full war program.

Part II deals with controls on the use of manpower, facilities, and materials while Part III goes into detail on the subject of war finance and stabilizati Part IV takes up the problem of dir stabilization measures with emphasis price and wage controls and rationi The majority of these materials used making up the last three parts dr heavily upon the experience of the Uni States in World War II.

Part V is devoted to the econon problems and policies of a limited d fense program such as that on which t United States embarked in 1950. And t final part presents an interesting analy of the probable magnitude of milit requirements during full-scale mobili tion in the near future and proposes economic program to cope with the pr lem if it should rise. A selected biblio raphy of additional material is include

Through the entire book one feels th closeness of the problem of today to th military and the alertness with whi every member of the Army must be e dowed so as to recognize today, in bo the military aspects of economics as w as the civilian, the entire theme of *E nomic Mobilization and Stabilization* "all-out readiness." That entails unde standing.

THE ECONOMICS OF MOBILIZATI AND INFLATION. By Seymour E. Harr 308 Pages. W. W. Norton & Co., New Yo $4.50.

HANDBOOK AND MANUAL FOR T NONCOMMISSIONED OFFICER. Pages. Combat Forces Press, Washingt D. C. $3.50 Cloth, $2.50 Paper.

THE EMERGENCE OF THE GRE POWERS, 1685-1715. By John B. Wolf. Pages. Harper & Bros., New York. $5.0

A DRAGON APPARENT: Travels in In China. By Norman Lewis. 317 Pages. Il trated. Charles Scribner's Sons, New Y $4.50.

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